

A UNIVERSITY of
MARYLAND
P U B L I C A T I O N



VOLUME 2

JANUARY, 1950

NUMBER 7

GENERAL
(COMBINED)
CATALOG
ISSUE

1949 - 1950

TABLE OF CONTENTS

	Page
Board of Regents.....	2
General Administrative Board ..	2
Calendar	4
Administrative Officers	5
Committees, faculty	7
General Information	9
Agriculture, College of	49
Agricultural, Extension, Research and Regulatory Agencies.....	110
Agriculture Experiment Station	118
Markets, State Department of.....	122
Horticulture Department, State	125
Dairy Inspection Service.....	126
Drainage, State Department of	127
Seed Inspection Service.....	128
Livestock Sanitary Service	129
Arts and Sciences, College of	131
Business and Public Administration, College of	239
Education, College of	297
Engineering and Aeronautical Sciences, College of	355
Home Economics, College of	399
Military Science, Physical Education and Recreation, College of	429
Graduate School Announcements	455
Special and Continuation Studies, College of.....	545
Summer School Session	597
Dentistry School, College of	663
Law School, College of	691
Medicine, School of	708
Pharmacy, School of	793
Nursing, School of	821
Records and Statistics	837
Honors and Awards	852
Summary of Student Enrollment	860
General Index	862

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Edited by Harvey L. Miller, Director of Publications, University of Maryland.

A UNIVERSITY of
MARYLAND
P U B L I C A T I O N

The seal of the University of Maryland is circular and features a central shield with a ship and a figure. The shield is surrounded by a wreath. The text "UNIVERSITY OF MARYLAND" is written around the top inner edge of the seal, and the dates "1847-1856-1920" are written around the bottom inner edge.

**GENERAL
AND
COMBINED CATALOG**



**COLLEGE PARK and BALTIMORE
SCHOOLS**

The provisions of this publication are not to be regarded as an irrevocable contract between the student and the University. The University reserves the right to change any provision or requirement at any time within the student's term of residence. The University further reserves the right at any time, to ask a student to withdraw when it considers such action to be in the best interests of the University.

BOARD OF REGENTS

AND

MARYLAND STATE BOARD OF AGRICULTURE *Term Expires*

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STANFORD Z. ROTHSCHILD, Secretary, 109 East Redwood Street, Baltimore	1952
J. MILTON PATTERSON, Treasurer, 120 West Redwood Street, Balti- more	1953
E. PAUL KNOTTS, Denton, Caroline County.....	1954
PETER W. CHICHESTER, 103 West Second Street, Frederick, Md.....	1951
HARRY H. NUTTLE, Denton, Caroline County.....	1950
PHILIP C. TURNER, 2 East North Avenue, Baltimore.....	1950
MRS. JOHN L. WHITEHURST, 4101 Greenway, Baltimore.....	1956
CHARLES P. McCORMICK, McCormick & Company, Baltimore.....	1948
MILLARD E. TYDINGS, Senate Office Building, Washington, D. C.....	1951
EDWARD F. HOLTER, Middletown, Md.	1952

Members of the Board are appointed by the Governor of the State for terms of nine years each, beginning the first Monday in June.

The President of the University of Maryland is, by law, Executive Officer of the Board.

The State Law provides that the Board of Regents of the University of Maryland shall constitute the Maryland State Board of Agriculture.

A regular meeting of the Board is held the last Friday in each month, except during the months of July and August.

GENERAL ADMINISTRATIVE BOARD

PRESIDENT BYRD, *Chairman*

MISS PREINKERT, *Secretary*

DEAN APPLEMAN	DEAN EPPLEY	MISS PREINKERT
DR. BAMFORD	MR. FOGG	DEAN PYLE
DEAN BENJAMIN	COL. GRISWOLD	DEAN ROBINSON
MR. BENTON	MR. HASZARD	DEAN SMITH
MR. BRIGHAM	DEAN HOWELL	COL. STADTMAN
MR. BROWN	DR. HUFF	DEAN STAMP
DR. BRUECKNER	DR. HOFFSOMMER	DEAN STEINBERG
DR. BISHOP	DR. KABAT	DEAN SYMONS
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MR. COBEY	DIRECTOR KEMP	DR. WHITE
DR. CORBETT	DR. LONG	DEAN WYLIE
DEAN COTTERMAN	DEAN MOUNT	DR. ZUCKER

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THE PRESIDENT, DEAN OF THE FACULTY, *Chairman*, DEANS OF COLLEGES
HEADS OF EDUCATIONAL DEPARTMENTS, DIRECTOR OF ADMISSIONS, REGISTRAR

UNIVERSITY OF MARYLAND
COLLEGE PARK, MARYLAND



CALENDAR FOR 1949-50

COLLEGE PARK

First Semester

1949

Sept. 19-23 Mon.-Fri. Registration, first semester
 Sept. 26 Mon. Instruction begins
 Oct. 20 Thurs. General Convocation for faculty and students
 Nov. 23 Wed., after Thanksgiving recess last class
 Nov. 28 Mon., 8 A. M. Thanksgiving recess ends
 Dec. 20 Tues., after Xmas recess begin last class

1950

Jan. 3 Tues., 8 A. M. Xmas recess ends
 Jan. 20 Fri. Charter Day, Alumni Banquet
 Jan. 25- Feb. 1 Wed.-Wed., inc. First semester examinations

1949	1950	1950	1951
JULY	JANUARY	JULY	JANUARY
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
.. 1 2	1 2 3 4 5 6 7 1 1 2 3 4
3 4 5 6 7 8 9	8 9 10 11 12 13 14	2 3 4 5 6 7 8	5 6 7 8 9 10 11 12
10 11 12 13 14 15 16	15 16 17 18 19 20 21	9 10 11 12 13 14 15	14 15 16 17 18 19 20
17 18 19 20 21 22 23	22 23 24 25 26 27 28	16 17 18 19 20 21 22	21 22 23 24 25 26 27
24 25 26 27 28 29 30	29 30 31	23 24 25 26 27 28 29	28 29 30 31
31		30 31	
AUGUST	FEBRUARY	AUGUST	FEBRUARY
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7 8 9 10 11 12 13	5 6 7 8 9 10 11	6 7 8 9 10 11 12	4 5 6 7 8 9
14 15 16 17 18 19 20	12 13 14 15 16 17 18	13 14 15 16 17 18 19	11 12 13 14 15 16 17
21 22 23 24 25 26 27	19 20 21 22 23 24 25	20 21 22 23 24 25 26	18 19 20 21 22 23 24
28 29 30 31	26 27 28	27 28 29 30 31	25 26 27 28
SEPTEMBER	MARCH	SEPTEMBER	MARCH
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4 5 6 7 8 9 10	5 6 7 8 9 10 11	3 4 5 6 7 8 9	4 5 6 7 8 9
11 12 13 14 15 16 17	12 13 14 15 16 17 18	10 11 12 13 14 15 16	11 12 13 14 15 16 17
18 19 20 21 22 23 24	19 20 21 22 23 24 25	17 18 19 20 21 22 23	18 19 20 21 22 23 24
25 26 27 28 29 30 . . .	26 27 28 29 30 31 . . .	24 25 26 27 28 29 30	25 26 27 28 29 30 31
OCTOBER	APRIL	OCTOBER	APRIL
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23 24 25 26 27 28 29	23 24 25 26 27 28 29	29 30 31	29 30 31
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NOVEMBER	MAY	NOVEMBER	MAY
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20 21 22 23 24 25 26	21 22 23 24 25 26 27	19 20 21 22 23 24 25	20 21 22 23 24 25 26
27 28 29 30	28 29 30 31	26 27 28 29 30 31	27 28 29 30 31
DECEMBER	JUNE	DECEMBER	JUNE
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11 12 13 14 15 16 17	11 12 13 14 15 16 17	10 11 12 13 14 15 16	10 11 12 13 14 15 16
18 19 20 21 22 23 24	18 19 20 21 22 23 24	23 24 25 26 27 28 29 30	17 18 19 20 21 22 23
25 26 27 28 29 30 31	25 26 27 28 29 30 . . .	31	24 25 26 27 28 29 30

Second Semester

February 7-10 Tuesday-Friday Registration, second semester
 February 13 Monday Instruction begins
 February 22 Wednesday Washington's Birthday, holiday
 March 25 Saturday Celebration, Maryland Day
 April 6 Thursday, after Easter recess begins last class
 April 11 Tuesday, 8 A. M. Easter recess ends
 May 18 Thursday Military Day
 May 30 Tuesday Memorial Day, holiday
 June 2-9 Friday-Friday, inc. Second semester examinations
 June 4 Sunday Baccalaureate exercises
 June 10 Saturday Commencement exercises

Summer Session, 1950

June 24-26 Saturday-Monday Registration, summer session
 June 27 Tuesday Summer session begins
 August 4 Friday Summer session ends

Short Courses

June 19-24 Monday-Saturday Rural Women's Short Course
 August 7-12 Monday-Saturday 4-H Club Week
 September 5-8 Tuesday-Friday Firemen's Short Course

OFFICERS OF ADMINISTRATION

- H. C. BYRD, LL.D., D.Sc., President of the University
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_____, Dean of School of Pharmacy
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Dining Hall

ROBINSON LAPPIN.....General Manager

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Alumni Office

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Religious Life Committee

ASSISTANT DEAN ROSALIE LESLIE, *Chairman*; PROFESSORS MARIE BRYAN, GEWEHR, HAMILTON, MCNAUGHTON, RANDALL, REID, SCOTT, SHREEVE, WHITE.

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BARBARA H. BAKER. Assistant Reference Librarian
FRANCES M. BEZANSON, A.B. Assistant Loan Librarian
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THERESA VEVERKA. Assistant Catalog Librarian
KATE WHITE Periodicals Librarian

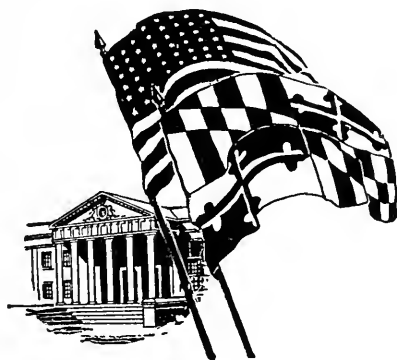
Baltimore: Dental, Medical, Pharmacy and School of Nursing Libraries

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ELIZABETH ANNA CROUSE. Assistant Librarian (Dentistry)
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SIMONE C. HURST. Librarian in Charge (School of Nursing)

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 FLORENCE R. KIRK.....Assistant Librarian (Medicine)

Law Library

ANNE C. BAGBY, A.B., B.L.S.....Librarian



GENERAL INFORMATION

UNIVERSITY OF MARYLAND

PRELIMINARY INFORMATION

The University of Maryland, in addition to being a State University, is the "Land-Grant" institution of Maryland. The University is co-educational in all of its branches.

College Park

The undergraduate colleges and the Graduate School of the University of Maryland are located at College Park, Prince George's County, Maryland, on a beautiful tract of rolling, wooded land, less than eight miles from the heart of the Nation's capital, Washington, D. C. This nearness to Washington, naturally, is of immeasurable advantage to students because of the unusual library facilities afforded by the Library of Congress and the libraries of Government Departments; the privilege of observing at close range sessions of the United States Supreme Court, the United States Senate and the House of Representatives; the opportunity of obtaining almost without effort an abundance of factual data which is constantly being assembled by the numerous agencies of the Federal Government.

The University is served by excellent transportation facilities, including the main line of the Baltimore and Ohio Railroad, by the Washington street car system, and by several bus lines. The campus fronts on the Baltimore-Washington Boulevard, a section of U. S. Route No. 1, which makes the University easily accessible by private automobile travel.

College Park, and the adjacent Calvert Hills and College Heights, constitute a group of fine residential communities close to the University campus, where are located the homes of many of the members of the faculty and staff, and where students who prefer to live off campus may find desirable living accommodations at reasonable rates.

Baltimore

The professional schools of the University—Dentistry, Law, Medicine, Nursing, and Pharmacy—the University Hospital, and the Baltimore Program of the College of Special and Continuation Studies are located in a group of splendid buildings, most of them erected in recent years, at or near the adjacent corners of Lombard and Greene Streets and Lombard and Redwood Streets, Baltimore, Maryland.

Baltimore, a thriving, modern industrial city of more than a million inhabitants, has an old established culture represented by outstanding educational institutions, libraries, museums, parks, public buildings, and places of historical interest.

Baltimore is justly proud of its well earned reputation as a center of the highest type of professional education, and no finer location could be chosen by a young man or young woman desiring to prepare for a professional career.

BRIEF HISTORY OF THE UNIVERSITY

While its advancement in recent years, both in the matter of physical plant facilities and educational standards has been especially rapid, the University has behind it a long and honorable history.

The history of the present University is the history of two institutions; the old privately-owned and operated University of Maryland in Baltimore and the Maryland State College (formerly Maryland Agricultural College) at College Park. These institutions were merged in 1920.

In 1807 the College of Medicine of Maryland was organized, the fifth medical school in the United States. The first class was graduated in 1810. A permanent home was established in 1814-1815 by the erection of the building at Lombard and Greene Streets in Baltimore, the oldest structure in America devoted to medical teaching. Here was founded one of the first medical libraries (and the first medical school library) in the United States. In 1812 the General Assembly of Maryland authorized the College of Medicine of Maryland to "annex or constitute faculties of divinity, law, and arts and sciences," and by the same act declared that the "colleges or

faculties thus united should be constituted an university by the name and under the title of the University of Maryland." By authority of this act, steps were taken in 1813 to establish "a faculty of law," and in 1823 a regular school of instruction in law was opened. Subsequently there were added: in 1882 a Department of Dentistry which was absorbed in 1923 by the Baltimore College of Dental Surgery (founded in 1840, the first dental school in the world); in 1889 a School of Nursing; and in 1904 the Maryland College of Pharmacy (founded in 1841, the third oldest pharmacy college in the United States).

The Maryland State College was chartered in 1856 under the name of the Maryland Agricultural College, the second agricultural college in the Western Hemisphere. For three years the College was under private management. In 1862 the Congress of the United States passed the Land Grant Act. This act granted each State and Territory that should claim its benefits a proportionate amount of unclaimed western lands, in place of scrip, the proceeds from the sale of which should apply under certain conditions to the "endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such a manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." This grant was accepted by the General Assembly of Maryland, and the Maryland Agricultural College was named as the beneficiary of the grant. Thus the College became, at least in part, a State institution. In the fall of 1914 control was taken over entirely by the State. In 1916 the General Assembly granted a new charter to the College, and made it the Maryland State College.

In 1920, by an act of the State Legislature, the University of Maryland was merged with the Maryland State College, and the resultant institution was given the name University of Maryland.

THE UNIVERSITY YEAR

The University year is divided into two semesters of approximately seven-weeks each, and a summer session of six weeks.

ADMINISTRATIVE ORGANIZATION OF THE UNIVERSITY

The government of the University is, by law, vested in a Board of Regents, consisting of eleven members appointed by the governor of the State, each for a term of nine years. The administration of the University is vested in the president. The deans, directors and other principal officers of the University form the Administrative Board. This group serves in an advisory capacity to the president.

Following is a list of the administrative divisions of the University:

At College Park

College of Agriculture	College of Special and Continuation Studies
College of Arts and Sciences	Graduate School
College of Business and Public Administration	Summer School
College of Education	_____
College of Engineering	Agricultural Experiment Station
College of Home Economics	Agricultural and Home Economics Extension Service
College of Military Science, Physical Education and Recreation	

At Baltimore

School of Dentistry	School of Pharmacy
School of Law	University Hospital
School of Medicine	Maryland State Board of Agriculture
School of Nursing	ture

State-Wide Activities

The Agricultural and Home Economics Extension Service maintains local representatives in every county of the State. These representatives, County Agents and Home Demonstration Agents, provide expert assistance to farmers and farm families in their areas and, when necessary, call upon the large staff of specialists at the headquarters of the Extension Service at College Park.

The Live Stock Sanitary Service, which is charged with responsibility for the control and eradication of diseases of live stock and poultry, maintains local veterinary inspectors throughout the State, in addition to specialists and laboratory technicians at the main laboratory at College Park and the branch laboratories in Salisbury, Centerville and Baltimore.

PHYSICAL FACILITIES—GROUNDS, BUILDINGS AND EQUIPMENT

College Park

Grounds. The University grounds at College Park comprise over six hundred acres. A broad rolling campus is surmounted by a commanding hill which overlooks a wide area and insures excellent drainage. Most of the buildings are located on this eminence and the adjacent grounds are laid out attractively in lawns and terraces ornamented with trees, shrubbery and flower beds. Below the hill and along either side of the Washington-Baltimore Boulevard lie the drill grounds and athletic fields.

Approximately 300 acres are used for research and teaching in horticulture, agriculture, dairying, livestock and poultry. An additional five hundred acres of land provided for plant research work are located at the Hopkins and Nash farms, five miles northwest of College Park and in various other localities.

Buildings. The buildings of beautifully designed Georgian colonial motif comprise about fifty principal structures and an additional fifty for supplemental utility, providing facilities for the varied activities carried on at College Park.

Administration and Instruction. This group consists of the following: *Administration Building*, which accommodates the offices of the President, Dean of Men, Business Manager, Comptroller, Director of Personnel, Registrar, Director of Admissions, Publications, Alumni Secretary, Director of Procurement and Supply, and Cashier, as well as Student Supply Store and University Post Office.

Agriculture Building, which houses the College of Agriculture, the Agricultural and Home Economics Extension Service and the Director of the Agricultural Experiment Station.

Other buildings, whose space is principally devoted to the College of Agriculture are: *Poultry Building*, *Horticulture Building*, and *Dairy Building*.

The *Arts and Science Building*, *Engineering Building*, *Education Building*, *Business and Public Administration and Home Economics Building*, as the names imply, house the various colleges.

The *Armory*, one of the finest structures of its kind in the country; the *Ritchie Coliseum*, seating 4,500, used for indoor sports events; the *Gymnasium*; the *Women's Field House* and the *Byrd Stadium* providing for 8,000 spectators are utilized principally by the College of Military Science and Physical Education. The *Chemistry Building*, *Science Building* (formerly *Agriculture Building*), *Classroom Building*, *Dean of Women's Building*, *Library*, *Morrill Hall*, and the *Home Economics Practice House*, complete the principal structures in this group.

Ten temporary frame classroom buildings serve the overflow from Chemistry, Physics and Zoology as well as the entire Psychology and Mathematics departments and provide a Recreation building for day students and headquarters for all student publications.

A Shop building is being jointly used by the Engineering College, Industrial Education and Agricultural Engineering departments until new buildings, planned as part of the *Glenn L. Martin College of Engineering and Aeronautical Sciences*, are constructed. The experimental *Wind Tunnel Building*, the first unit of this group, is located near the Paint Branch bridge on the north side of the campus.

Housing. *The Women's Dormitories* are Anne Arundel Hall and Margaret Brent Hall. In addition, there are four smaller units at present providing housing for sorority groups. Two new women's dormitories are to be completed early in 1949.

Men's Dormitories. Calvert and Silvester Halls are the only two named dormitories of a group of ten separate buildings housing men students.

A *Veterans' Housing Project* provides facilities for 1,100 male students in nine dormitories and 104 veteran families in thirteen family units.

Experiment Station. The headquarters for the Agricultural Experiment Station are in the new Agricultural building. The laboratories and greenhouses for this research work are located in several buildings on the campus.

The *Live Stock Sanitary Service* is located in a group of buildings about a mile east of the main campus, near the Baltimore and Ohio Railroad Station.

Service Buildings. This group includes the *Central Heating Plant*, *Service Building*, the *Infirmiry*, and the *Dining Hall*.

The *Fire Service Extension Building*, completed in 1946, is located south of the Byrd Stadium on the boulevard. It houses the Fire Extension Service offices as well as the College Park Volunteer Fire Department.

Historical Building. *Rosborough Inn.* This historic Inn, built in 1798, is the oldest building on the campus and for many years housed the Agricultural Experiment Station. Entirely restored, it is now one of the most beautiful and interesting buildings on the campus.

U. S. Government Buildings. *United States Bureau of Mines.* The Eastern Experiment Station of the United States Bureau of Mines is located on the University grounds. The general laboratories are used for instruction purposes in College of Engineering as well as by the United States Government for Experimental work. The building contains a geological museum and a technical library. *United States Fish and Wildlife Service Laboratory.* The technological research laboratory building of the U. S. Fish and Wildlife Service is located on the University campus. It contains laboratories for research in fisheries dealing with chemical, chemical engineering, bacteriological, nutritional, and biological subjects. Through a cooperative arrangement with the University it is possible for students to do graduate work using the facilities of these laboratories.

Baltimore

The group of buildings located in the vicinity of Lombard and Greene Streets provides available housing for the Baltimore division of the University. The group comprises the original *Medical School Building*, erected in 1814; the *Old Hospital* now used as a dispensary; the *New University Hospital* with approximately 450 beds; the *Frank C. Bressler Research Laboratory*; the *Dental and Pharmacy Building*; the *Nurses' Home*; the *Law School Building*; *Davidge Hall*, which houses the Medical library; and the *Administration Building*.

LIBRARY FACILITIES

Libraries are located at both the College Park and Baltimore divisions of the University.

The General Library at College Park, completed in 1931, is an attractive and well equipped structure. The main reading room on the second floor seats 250 and has about 5,000 reference books and bound periodicals on open shelves. The five-tier stack room and basement are equipped with carrels and desks for use of advanced students. The Library Annex, a temporary, two-story building located just west of the main building, is used for reserve book reading and seminars. The Annex accommodates about 300 people. About 25,000 of the 137,000 volumes on the campus are shelved in the Chemistry, Entomology and Mathematics Departments, the Graduate School, and other units. Over 1,000 periodicals are currently received.

Facilities in Baltimore consist of the libraries of the School of Dentistry, containing 13,000 volumes; the School of Law, 20,000 volumes; the School of Medicine, 30,000 volumes; the School of Nursing, 1,500 volumes; and the School of Pharmacy, 11,000 volumes. The Medical Library is housed in Davidge Hall; the remaining four libraries have adequate quarters in the buildings of their respective schools, where they are readily available for use. Facilities for the courses in Arts and Sciences are offered jointly by the libraries of the Schools of Dentistry and Pharmacy.

The libraries of the University total in the aggregate over 210,000 bound volumes. The General Library is a depository for publications of the United States Government and numbers some 75,000 documents in its collection.

The University Library System is able to supplement its reference service by borrowing material from other libraries through Inter-Library Loan or Bibliofilm Service, or by arranging for personal work in the Library of Congress, the United States Department of Agriculture Library, and other agencies in Washington.

ADMISSION PROCEDURE

Undergraduate Schools: Applicants for admission to the College of Agriculture, Arts and Sciences, Business and Public Administration, Education, Engineering, and Home Economics should communicate with the Director of Admissions, University of Maryland, College Park, Maryland.

Graduate School: Those seeking admission to the Graduate School should address the Dean of the Graduate School, University of Maryland, College Park.

Professional Schools: Information about admission to the professional schools in Baltimore may be had by writing to the dean of the college concerned or to the Director of Admissions of the University.

Applicants from Secondary Schools: Procure an application blank from the Director of Admissions. Fill in personal data requested and ask your principal or headmaster to enter your secondary school record and mail the blank to the Director of Admissions.

To avoid delay, it is suggested that applications be filed not later than July 1 for the fall semester, and January 1 for the spring semester. Applications from students completing their last semester of secondary work are encouraged. If acceptable, supplementary records will be sent upon graduation.

Applicants from Other Colleges and Universities: Secure an application blank from the Director of Admissions. Fill in personal data requested and ask secondary school principal or headmaster to enter secondary school record and send the blank to the Director of Admissions. Request the Registrar of the College or University attended to send a transcript to the Director of Admissions, College Park, Maryland.

Time of Admission: New students should plan to enter the University at the beginning of the fall semester if possible. Students, however, will be admitted at the beginning of either semester.

ADMISSION OF FRESHMEN

Admission by Certificate: Graduates of accredited secondary schools of Maryland or the District of Columbia will be admitted by certificate upon the recommendation of the principal. Graduates of out-of-state schools should have attained college certification marks, such marks to be not less than one letter or ten points higher than the passing mark.

Veterans and other mature persons who are not high school graduates may qualify for admission to the freshman class by passing prescribed tests comparable to those employed by state authorities to establish high school equivalence.

SUBJECT REQUIREMENTS

In selecting students more emphasis will be placed upon good marks and other indications of probable success in college rather than upon a fixed pattern of subject matter.

English 4 units required for all divisions of the University.

Mathematics 3½ units, including Solid Geometry, required for Engineering, Mathematics and Physics.

For all Colleges, one unit each of Algebra and Plane Geometry is desirable. A unit of Algebra will be needed by Business and Public Administration students and by most Education, Home Economics and Arts students.

Social Science; Natural

and Biological Science.. 1 unit from each group is required; two are desirable.

Foreign Languages.....Those who will follow the professions, enter journalism, foreign trade or service, study the humanities or do research, should have a good foundation in one or more, but none is required.

ElectivesFine Arts, trade and vocational subjects are acceptable.

Transfer Students: Only students in good standing as to scholarship and conduct are eligible to transfer. Advanced standing is assigned to transfer students from accredited institutions under the following conditions:

1. A minimum of one year of resident work of not less than 30 semester hours is necessary for a degree.
2. The University reserves the right at any time to revoke advanced standing if the transfer student's progress is unsatisfactory.

Special Students: Applicants who are at least twenty-one years of age, and who have not completed the usual preparatory course, may be admitted to such courses as they seem fitted to take. Special students are ineligible to matriculate for a degree until entrance requirements have been satisfied.

Unclassified Students: Applicants who meet entrance requirements but who do not wish to pursue a program of study leading to a degree are eligible for admission to pursue courses for which they have met prerequisites.

PHYSICAL EDUCATION AND HEALTH EDUCATION REQUIREMENTS FOR MEN AND WOMEN

All undergraduate students classified academically as freshmen or sophomores who are registered for more than six semester hours are required to enroll in and successfully complete the four prescribed courses in physical education. The successful completion of these courses is a prerequisite for graduation. They must be taken by all eligible students during the first two years of attendance at the University, whether they intend to graduate or not. Students not qualified to take the regular activities program will be given adaptive work suitable to their physical capacities. Transfer students who do not have credit in these courses must complete them or take them until graduation, whichever occurs first.

Health Education Requirement for Women:

All freshman women who are registered for more than six semester hours must enroll in and successfully complete the prescribed courses for four credits in Health Education.

Regulations regarding transfer students and requirements for graduation apply as stated above for Physical Education.

Exemptions:

1. Students with approved military exemption.
2. Students over thirty years of age.

Required Uniforms:

A regulation uniform as prescribed by the College of Military Science, Physical Education and Recreation is required for both men and women.

REQUIREMENTS IN MILITARY INSTRUCTION

All male students unless specifically exempted under University rules are required to take elementary military training for a period of two years. The successful completion of this course is a prerequisite for graduation but it must be taken by all eligible students during the first two years of attendance at the University, whether they intend to graduate or not. Transfer students who do not have the required two years of military training will be required to complete the course or take it until graduation, whichever occurs first.

R. O. T. C. EXEMPTIONS

1. Students who have completed the course in other senior units of the R. O. T. C.
2. Students holding commissions in the Reserve Corps of the Army, Navy, Marines or Coast Guard.
3. Students who have served in the Army, Navy, Marine Corps, or Coast Guard for a period of time long enough to be considered equivalent to the training received in the R. O. T. C. Short periods of service in any of the branches named above will be evaluated and allowed as credit toward completion of the course.
4. Graduate students.
5. Students classified as "Special Students" who are registered for less than seven semester credits.
6. Students who have passed their thirtieth birthday before starting the course.

Students excused from basic military training are required to take an equivalent number of credits in other subjects, which substitution must be approved by the dean of the college concerned.

THE PROGRAM IN AMERICAN CIVILIZATION

Work in American Civilization is offered at three distinct academic levels. The first level is required of all freshmen or sophomores at the University of Maryland and is described below.

The second level is for undergraduate students wishing to carry a major in this field (see catalog for the College of Arts and Sciences). The third level is for students desiring to do graduate work in this field (see Catalog for the Graduate School).

Courses in the American Civilization Program Required of All Freshmen and Sophomores

All students (unless specific exceptions are noted in printed curricula) are required to take twelve semester hours of English (for sequence and descriptions, see the offerings of the Department of English), three semester hours of sociology (Soc. 1—Sociology of American Life), three semester hours of government (G. & P. 1—American Government), and six semester hours of history (H. 5, 6—History of American Civilization).

These several courses are planned as parts of a whole that is designed to acquaint students with the basic facts of American history, with the fundamental patterns of our social, economic, political, and intellectual development, and with the riches of our cultural heritage.

REGULATION OF STUDIES

Course Numbers. Courses for undergraduates are designated by numbers 1—99; courses for advanced undergraduates and graduates, by numbers 100—199*; and courses for graduates, by numbers 200—299.

A course with a single number extends through one semester. A course with a double number extends through two semesters.

Schedule of Courses. A semester time schedule of courses, giving days, hours, and rooms, is issued as a separate pamphlet at the beginning of each semester. Classes are scheduled beginning at 8:00 A. M.

Definition of Credit Unit. The semester hour, which is the unit of credit in the University, is the equivalent of a subject pursued one period a week for one semester. Two or three periods of laboratory or field work are equivalent to one lecture or recitation period. The student is expected to devote three hours a week in classroom or laboratory, including outside preparation for each credit hour in any course.

Examinations. Examinations are held at the end of each semester in accordance with the official schedule of examinations. Students are required to use the prescribed type of examination book in final examinations; and, also, when requested to do so by the instructor, in tests given during the semester.

Final examinations are held in all courses except in classes where the character of the work will permit the instructor to note frequently the progress and proficiency of the student—in which case they may be omitted upon approval of the head of the department and dean of the college. Periodic examinations and tests are given during regularly scheduled class periods. Final examinations, where required, are given according to schedule and are of not more than two hours' duration.

Final examinations for undergraduate candidates for degrees are waived in the semester immediately preceding their June graduation exercises, and final grades are based on daily grades and tests given during the semester.

* But not all courses numbered 100 to 199 may be taken for graduate credit.

Marking System: The following symbols are used for marks: A, B, C, and D, passing; F, Failure; I, Incomplete.

Mark A denotes superior scholarship; mark B, good scholarship; mark C, fair scholarship; and mark D, passing scholarship.

In computing scholastic averages, numerical values are assigned as follows: A—4; B—3; C—2; D—1; F—0.

A scholastic average of C is required for graduation and for junior standing. At least three-fourths of the credits required for graduation must be earned with marks of A, B, or C. A student who receives the mark of D in more than one-fourth of his credits must take additional courses or repeat courses until he has met these requirements.

Academic Regulations: A separate pamphlet is published each year listing the regulations which govern the academic work and other activities of students.

REPORTS

Written reports of grades are sent by the Registrar to parents or guardians of minor students who are not veterans at the close of each semester.

DELINQUENT STUDENTS

A student must attain passing marks in fifty per cent of the semester hours for which he is registered, or he is automatically dropped from the University. The Registrar notifies the student, his parent or guardian, and the student's dean of this action. A student who has been dropped for scholastic reasons may appeal in writing to the Committee on Admission, Guidance, and Adjustment for reinstatement. The Committee is empowered to grant relief for just cause. A student who has been dropped from the University for scholastic reasons, and whose petition for reinstatement is denied, may again petition after a lapse of at least one semester.

The University reserves the right to request at any time the withdrawal of a student who cannot or does not maintain the required standard of scholarship, or whose continuance in the University would be detrimental to his or her health, or to the health of others, or whose conduct is not satisfactory to the authorities of the University. Students of the last class may be asked to withdraw even though no specific charge be made against them.

According to University regulations, excessive absence from any course is penalized by failure in that course. Students who are guilty of persistent absence from any course will be reported to the President or to his appointed representative for final disciplinary action.

JUNIOR STANDING

For junior standing, the requirements shall be, in addition to the required military and physical education, fifty-six (56) semester hours of academic credit, the whole program to be completed with an average grade of C.

DEGREES AND CERTIFICATES

The University confers the following degrees: Bachelor of Arts, Bachelor of Science, Master of Education, Master of Arts, Master of Science, Master of Business Administration, Master of Foreign Studies, Doctor of Philosophy, Doctor of Education, Civil Engineer, Mechanical Engineer, Electrical Engineer, Chemical Engineer, Bachelor of Laws, Doctor of Medicine, Doctor of Dental Surgery, and Bachelor of Science in Pharmacy.

Students in the two-year and three-year curricula are awarded certificates.

No baccalaureate degree will be awarded to a student who has had less than one year of resident work in this University. The last thirty semester credits of any curriculum leading to a baccalaureate degree must be taken in residence at the University of Maryland. Candidates for the baccalaureate degree in combined curriculums at College Park and Baltimore must complete a minimum of thirty semester credits at College Park.

An average mark of C (2.0) is required for graduation. In addition, at least three-fourths of the credits required for graduation must be earned with marks of A, B, or C. In the case of a candidate for a combined degree or of a transfer student with advanced standing, a grade of D will not be recognized for credit towards a degree in more than one-fourth of the credits earned at this institution.

The requirements for graduation vary according to the character of work in the different colleges and schools. Full information regarding specific college requirements for graduation will be found in the college sections of the catalog.

Each candidate for a degree must file in the office of the Registrar eight weeks prior to the date he expects to graduate, a formal application for a degree. Candidates for degrees must attend a convocation at which degrees are conferred and diplomas are awarded. Degrees are conferred in *absentia* only in exceptional cases.

DEFINITION OF RESIDENCE AND NON-RESIDENCE

Students who are minors are considered to be resident students, if at the time of their registration their parents have been residents of this State for at least one year, or upon their return to the State, if they have resided in the State for one full year during the five years immediately preceding their return.

Adult students are considered to be residents, if at the time of their registration they have been residents of this State for at least one year, or upon their return to the State, if they have resided in the State for one full year during the five years immediately preceding their return; provided such residence has not been acquired while attending any school or college in Maryland.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents move to and become legal

residents of this State, by maintaining such residence for at least one full calendar year. However, the right of the student (minor) to change from a non-resident to a resident status must be established by him prior to registration for a semester in any academic year.

General

FEES AND EXPENSES

All checks or money orders should be made payable to the University of Maryland for the exact amount of the charges.

In cases where students have been awarded Legislative Scholarships or University Grants, the amount of such scholarship or grant will be deducted from the bill.

All fees are due and payable at the time of registration, and students should come prepared to pay the full amount of the charges. No student will be admitted to classes until such payment has been made. Veterans are required to comply with these conditions if the University does not have in its possession at the time of registration an approved Certificate of Eligibility and Entitlement from the Veterans Administration.

The University reserves the right to make such changes in fees and other charges as may be found necessary, although every effort will be made to keep the costs to the student as low as possible.

No degree will be conferred, nor any diploma, certificate, or transcript of a record issued to a student who has not made satisfactory settlement of his account.

The University will award to all World War II Veteran Students approved by the Veterans Administration for the educational benefits under Public Laws 16 or 346, a scholarship whenever the total charges excluding room and board, but including textbooks and supplies, exceeds the \$500 allotment per academic year payable to the University by the Federal Government. The amount of such scholarship shall be the difference between such total charges as above defined and the maximum amount payable by the Veterans Administration during the veteran student's period of eligibility.

RESIDENTS, NON-RESIDENTS

Fees for Undergraduate Students	First Semester	Second Semester	Total
Maryland Residents			
Fixed Charges	\$82.00	\$83.00	\$165.00
Athletic Fee	15.00	....	15.00
Special Fee	10.00	....	10.00
Student Activities Fee.....	10.00	....	10.00
Infirmary Fee	5.00	....	5.00
Post Office Fee.....	2.00	....	2.00
Advisory and Testing Fee.....	1.00	....	1.00
Total for Maryland Residents.....	\$125.00	\$83.00	\$208.00

Residents of the District of Columbia, Other States and Countries	First Semester	Second Semester	Total
Tuition Fee for Non-Resident Students.	\$63.00	\$62.00	\$125.00
Total for Non-Resident Students.....	\$188.00	*\$145.00	\$333.00

Board and Lodging

Board	\$170.00	\$170.00	\$340.00
Dormitory Room	\$54-\$63	\$54-\$63	\$108-\$126
Total, Board and Room.....	\$224-\$233	\$224-\$233	\$448-\$466
Temporary Dormitories, Men.....	\$50	\$50	\$100

The Fixed Charges Fee is not a charge for tuition. It is a charge to help defray the cost of operating the University's physical plant and other various services which ordinarily would not be included as a cost of teaching personnel and teaching supplies. Included in these costs would be janitorial services, cost of heat, electricity, water, etc., administrative and clerical cost, maintenance of buildings and grounds, maintenance of libraries, cost of University publications, Alumni Office, the University Business and Financial Offices, the Registrar's Office, the Admissions Office, and any other such services as are supplemental and necessary to teaching and research are supported by this fee.

The Athletic Fee is charged for the support of the Department of Intercollegiate Athletics. All students are eligible and encouraged to participate in all of the activities of this department and to attend all contests in which they do not participate.

The Special Fee is used for improving physical training facilities and for other University projects that have direct relationship to student welfare, especially athletics and recreation. This fee now is allocated to a fund for construction of a stadium, a new combination coliseum and auditorium, and to constructing a new swimming pool, as soon as the fund is sufficient and materials are available.

The Students Activities Fee is a mandatory fee included at the request of the Student Government Association. It covers subscriptions to the Diamondback, student paper, of \$1.50 per year, the Old Line, literary magazine, of \$.75 per year, and the yearbook; class dues, including financial support for the musical and dramatic clubs.

* Students entering the University for the second semester will pay the following additional fees: Athletic, \$7.50; Special, \$5.00; Student Activities, \$8.00; Infirmary, \$2.50; Post Office Fees, \$1.00; Advisory and Testing Fee, \$.50.

LABORATORY AND OTHER FEES

Special Fees

Matriculation Fee for undergraduates, payable at time of first registration in the University.....	\$10.00
Diploma Fee for Bachelor's degree, payable just prior to graduation.	10.00
Cap and Gown fee, Bachelor of Arts degree.....	2.50
Engineering College Fee, Per Semester.....	3.00
Home Economics College Fee, Per Semester.....	10.00
Fees for Auditors are exactly the same as fees charged to students registered for credit.	

Laboratory Fees Per Semester Course

Bacteriology	\$10.00	Education	\$1.00
Botany	5.00	Industrial Education	3.00
Chemical Engineering	8.00	Physics—	
Chemistry—		Introductory	3.00
All Other	10.00	All Other	6.00
Dairy	3.00	Psychology	4.00
Electrical Engineering...	4.00	(Psych. 150, 151, 152)	
Entomology	3.00	Secretarial Training	7.50
Home Economics—		Speech—	
(Non-Home Students)		Radio and Stagecraft...	2.00
Art Textiles and Clothing	3.00	All Other	1.00
Foods and Practice House		Zoology—	
(each)	7.00	Introductory	3.00
		All Other	6.00

Miscellaneous Fees and Charges

Fee for part-time students per credit hour.....	8.00
(The term "part-time students" is interpreted to mean undergraduate students taking 6 semester credit hours or less. Students carrying more than 6 semester hours pay the regular fees.)	
Late Registration Fee.....	5.00
(All students are expected to complete their registration, including the filing of class cards and payment of bills, on the regular registration days.) Those who do not complete their registration during the prescribed days will be charged a fee of.....	
Fee for change in registration.....	3.00
Fee for failure to report for medical examination appointment.....	2.00
Special Examination Fee—to establish college credit—per semester hour	5.00
Makeup Examination Fee—(for students who are absent during any class period when tests or examinations are given).....	1.00

Miscellaneous Fees and Charges (Continued)

Transcript of Record Fee.....	1.00
Property Damage Charge—Students will be charged for damage to property or equipment. Where responsibility for the damage can be fixed, the individual student will be billed for it; where responsibility cannot be fixed, the cost of repairing the damage or replacing equipment will be pro-rated.	

Library Charges:

Fine for failure to return book from general library before expiration of loan period.....	.05 per day
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Fine for failure to return book from Reserve Shelf before expiration of loan period—

First hour overdue.....	.25
Each additional hour overdue.....	.05

In case of loss or mutilation of a book, satisfactory restitution must be made.

Text Books and Supplies

Text books and classroom supplies—These costs vary with the course pursued, but will average per semester..... 35.00

Fees for Graduate Students

Tuition charge for students carrying more than 8 semester credit hours	65.00
Tuition charge per semester hour for students carrying 8 semester credit hours or less.....	8.00
Matriculation Fee, payable only once, at time of first registration.	10.00
Diploma Fee (For Master's Degree).....	10.00
Cap and Gown fee, Master's degree.....	2.75
Graduation Fee (For Doctor's Degree).....	25.00
Cap and Gown fee, Doctor's degree.....	3.75

Notes: Fees in the Graduate School are the same for all students, whether residents of the State of Maryland or not.

All fees, except Diploma Fee and Graduation Fee, are payable at the time of registration for each semester.

Diploma Fee and Graduation Fee must be paid prior to graduation.

Fees for Evening Courses

Matriculation Fee (Payable once, at time of first registration by all students—full time and part time; candidates for degrees, and non-candidates).

For Undergraduates	10.00
For Graduates	10.00

Tuition Charge (same for all students)—Limit six hours. Charge per credit hour..... 8.00

Laboratory Fees—A laboratory fee, to cover cost of materials used, is charged in laboratory courses. These fees vary with the course and can be ascertained in any case by inquiry of the Director of Evening Courses, or the instructor in charge of the course.

WITHDRAWAL AND REFUND OF FEES

Any student compelled to leave the University at any time during the academic year, should file an application for withdrawal, bearing the proper signatures, in the office of the Registrar. If this is not done, the student will not be entitled, as a matter of course, to a certificate of honorable dis-

missal, and will forfeit his right to any refund to which he would otherwise be entitled. The date used in computing refunds is the date the application for withdrawal is filed in the office of the Registrar.

In the case of a minor, withdrawal will be permitted only with the written consent of the student's parent or guardian.

Students withdrawing from the University will receive a refund of all charges, except board, lodging, deposits for room reservation and advanced registration, less the matriculation fee in accordance with the following schedule:

<i>Period from Date Instruction Begins</i>	<i>Percentage Refundable</i>
Two weeks or less.....	80%
Between two and three weeks.....	60%
Between three and four weeks.....	40%
Between four and five weeks.....	20%
Over five weeks.....	0

Board and lodging are refunded only in the event the student withdraws from the University. Refunds of board and lodging are made on a pro-rata, weekly basis. Dining Hall cards issued to boarding students must be surrendered at the Dining Hall office the day of withdrawal.

GRADUATE SCHOOL, DEPARTMENT OF AGRICULTURE

To provide broader educational opportunities for those served by each institution, the Graduate School for the United States Department of Agriculture and the University of Maryland have developed a cooperative arrangement under which certain resources of each institution are made available to students of both institutions. Representatives of certain subject matter departments at each institution are engaged in developing integrated educational programs.

Under these arrangements, work taken at the Graduate School of the United States Department of Agriculture may be applied as partial residence credit toward undergraduate or advanced degrees at the University of Maryland. Those wishing to take advantage of these arrangements must work out an approved program of study with their advisers.

TRANSCRIPTS OF RECORDS

Students and alumni may secure transcripts of their scholastic records from the Office of the Registrar. No charge is made for the first copy; for each additional copy, there is a charge of \$1.00. Make checks payable to the University of Maryland.

Transcripts of records should be requested at least one week in advance of the date when the records are actually needed.

No transcript of a student's record will be furnished any student or alumnus whose financial obligations to the University have not been satisfied.

STUDENT HEALTH AND WELFARE

The University recognizes its responsibility for safeguarding the health of its student body and takes every reasonable precaution toward this end. All new undergraduate students will be given a thorough physical examination at the time of their entrance to the University. A modern, well-equipped infirmary is available for the care of the sick or injured students. A small fee is charged undergraduate students for this infirmary service.

Infirmary Service

1. All undergraduate students may receive dispensary service and medical advice at the infirmary during regular office hours established by the physician in charge.

2. A registered nurse is on duty at all hours in the Infirmary. Students are required to report illnesses during office hours unless the case is an emergency.

3. Students not residing in their own homes may, upon order of the University physician, be cared for in the Infirmary to the extent of the facilities available. Students living off the campus will be charged a subsistence fee. In case of illness requiring a special nurse or special medical attention, the expense must be borne by the student.

4. Students living in dormitories, fraternity houses, sorority houses, or "off campus" houses who are too ill to go to the Infirmary must notify the housemother, proctor or householder who in turn will notify the Infirmary. This will be done in all cases, except emergencies, during the doctors' office hours.

5. When a student is admitted to the Infirmary and the illness is of a serious nature, parents will be promptly informed of the admission and of the progress of the student's condition. Visiting hours are 10 A. M. and 11 A. M. and 7 P. M. to 7:30 P. M. daily. Each patient is allowed only three visitors at one time. No visitor may see any patient until permission is granted by the doctor or nurse in charge.

6. Hospitalization is not available at the Infirmary for faculty, graduate students or employees. Emergency dispensary service, however, is available for faculty, graduate students and employees who are injured in University service or University activities.

Public Health

All dormitories, "off campus" houses, sorority and fraternity houses are inspected periodically by the Student Health Service to insure that proper sanitary conditions are maintained and that kitchens meet the prescribed standards for cleanliness and sanitation. All food handlers will be examined in accordance with directives issued by the Student Health Service.

LIVING ARRANGEMENTS

Dormitories

1. *Room Reservations.* All new students desiring to room in the dormitories should request room application cards by carefully checking the admission blanks. The Director of Admissions will refer these to the offices of the Dean of Men or the Dean of Women. Application cards or blanks will be sent to applicants and should be returned promptly. A fee of \$15.00 will be requested which will be deducted from the first semester charges when the student registers. A room is not assured until notice is received from the Dean concerned. Room reservations not claimed by freshmen or upper-classmen on their respective registration days will be cancelled. A room will be held by special request until after classes begin providing the dormitory office is notified by the first day of registration. Room reservation fees will not be refunded if the request is received later than September 1 for the first semester or January 15 for the second semester.

2. Applications for rooms are acted upon only when a student has been fully admitted academically to the University.

3. Reservations by students in attendance at the University should be made at least two weeks before the close of the preceding semester. New students are urged to attend to their housing arrangements about three months in advance of registration. It is understood that all housing and board arrangements which are made for the fall semester are binding for the spring semester. Room and board charges will begin with the evening meal prior to the first day of registration and include the last day of classes for each semester with the exception of the Christmas recess and the Easter recess. Students unable to make other arrangements for the holidays may consult with the Dean of Men or the Dean of Women for assistance. All freshmen except those who live at home, are required to room in the dormitories when accommodations are available.

Equipment

Students assigned to dormitories should provide themselves with sufficient single blankets, at least two pairs of sheets, a pillow, pillow cases, towels, a laundry bag, and a waste paper basket.

The individual student must assume responsibility for all dormitory property assigned to him. Any damage done to the property other than that which would result from ordinary wear and tear will be charged to the student concerned.

Each student will be furnished a key for his room for which a deposit of \$1.00 will be made. This deposit will be returned in exchange for the key at the end of the year.

Laundry. The University does not provide laundry service and each student is responsible for his or her own laundry. There are several reliable laundry concerns in College Park; or if a student prefers, he may

send his laundry home. Women students may, if they wish, do their own laundry in the laundry room in each dormitory, not including bed linen.

Personal baggage sent via the American Express and marked with a dormitory address will be delivered when the student concerned notifies the College Park express office of his arrival.

VETERANS' HOUSING

A Veterans' Housing project has been established on the campus in cooperation with the Federal Government. This project is governed by regulations established in accordance with Federal directives. The dormitories in the project are under the same regulations as the other University dormitories, except that the residents are not required to board at the University Dining Hall.

OFF-CAMPUS HOUSES

1. *Men:* Only upper-classmen, veterans and those freshmen who cannot be accommodated are allowed to live in houses off the campus. A list of "off campus" rooms is available in the Office of the Dean of Men.

2. *Women:* All housing arrangements for women students must be approved by the Office of the Dean of Women.

3. Undergraduate women students who cannot be accommodated in the women's dormitories are referred to private homes which are registered in the Office of the Dean of Women as "Off-Campus Houses for Undergraduate Women." The householders in these homes agree to maintain the same rules and regulations as in the dormitories but business arrangements are made entirely between the student and the householder. Students and their parents should plan to see these accommodations personally and talk with the householder before making final arrangements. No woman student should enter into an agreement with a householder without first ascertaining at the Office of the Dean of Women that the house is on the approved list. No "off campus" householder should accept a deposit without first checking with the Office of the Dean of Women as to the eligibility for housing of the applicant, which depends on the waiting lists from the various areas.

Meals

All students who live in permanent University dormitories must board at the University Dining Hall.

Students not living in the dormitories may make arrangements to board by the semester at the Dining Hall, eat at the University cafeteria, or at eating establishments in College Park. A few "off-campus" houses provide board as well as room.

Estimated Expenses of "Off-Campus" Residence

Most of these houses have only double rooms with twin beds. The students provide their own linens as in the dormitory. Price per person for

room is about \$18.00 a month, all rooms being registered with the room control board.

No rebate is made for meals not eaten at the University Dining Hall or in other places where board is paid in advance. Therefore, with care, students may save enough money on their meals to make up for the difference in rent between the off-campus houses and the dormitory. Some even find this less expensive.

Girls may find desirable rooms in good homes where they can earn their room and board by applying to the Office of the Dean of Women.

OFFICE OF THE DEAN OF WOMEN

The Office of the Dean of Women exists for the purpose of furnishing friendly counsel and helpful guidance to women students in connection with any of their personal problems, especially those relating to financial need, employment, housing, etc. In addition, it coordinates the interests of women students, handles matters of chaperonage at social functions, regulation of sorority rushing in cooperation with Panhellenic Association, and so forth. It has supervision over all housing accommodations for women students, whether on or off campus. A personal interview with one of the Deans of Women is required of every woman student on entering and on leaving the University. Any woman student is invited to avail herself of all of the services of this department.

OFFICE OF THE DEAN OF MEN

The Office of the Dean of Men exists for the purpose of furnishing friendly counsel and helpful guidance to male students in connection with any of their personal problems, especially those relating to financial need, employment, housing, etc. This office also handles for male students matters of discipline and infringement of University regulations.

ADDITIONAL PERSONAL SERVICES

The above services are closely coordinated with the activities of the University Counseling Bureau, maintained by the Department of Psychology. This Bureau is provided with a well-trained technical staff and is equipped with an extensive stock of standardized tests of aptitude, ability, and interest. By virtue of payment of the annual "Advisory and Testing Fee," students are entitled to the services of the University Counseling Bureau without further charge.

SCHOLARSHIPS AND STUDENT AID

Under an act of the Legislature, the University may award such scholarships, and accept gifts for scholarships, as it may deem wise, and consistent with prudent financial operation.

All scholarships for the undergraduate departments of the University at College Park are awarded by the Faculty Committee on Scholarships. All scholarship applicants are subject to the approval of the Director of Ad-

missions insofar as qualifications for admission to the University are concerned. All holders of scholarships are subject to the educational standards of the University, and to department regulations and standards.

Scholarships are awarded on the basis of apparent qualifications for leadership. In making scholarship awards, consideration is given to participation in the various student activities, and to other outstanding attributes that indicate future possibilities as a leader, as well as to scholastic achievement, character, and all other factors which distinguish the most worthwhile students. It is the intention that scholarships shall be provided for young men and women who have characteristics which make them outstanding among their fellows, who might not otherwise be able to provide for themselves an opportunity for advanced education.

The types of scholarships and loan funds available are as follows:

Full Scholarships

The University awards 36 full scholarships, 24 for men and 12 for women, covering board, lodging, fixed charges, and fees for which graduates of Maryland high and preparatory schools only are eligible. These scholarships are similar to those which the State provides and pays for at private colleges in the State, except that the State makes no special appropriation therefor.

General Assembly Scholarships

These scholarships are for fixed charges only and are awarded by members of the Legislature, three for each Senator and one for each member of the House of Delegates. These scholarships may be awarded by a member of the House of Delegates or a senator only to persons in the county or Legislative district of Baltimore City which the Delegate or Senator represents. Awards of such scholarships are subject to approval by the Faculty Committee on Scholarships and by the Director of Admissions as to qualifications for admission.

University Grants

The University awards to deserving and outstanding secondary school graduates a limited number of scholarships covering fixed charges only.

District of Columbia Scholarships

District of Columbia students for many years have been granted a favored position with regard to non-resident tuition charges. This favored position has been discontinued, which means that District of Columbia students now pay considerably higher costs to attend the University. In view of this, and in further view of the increased costs to students from other localities, and in line with action by several other universities and colleges which have increased tuition costs, the University has established 20 scholarships for the students from the District of Columbia and other states.

Endowed Scholarships

The University has a few endowed scholarships and special awards. These are paid for by income from funds especially established for this purpose. Brief descriptions of these awards follow:

Albright Scholarship

A scholarship, known as the Victor E. Albright Scholarship, is open to graduates of Garrett County High Schools who were born and reared in that County. Application should be made to the high school principals.

Alumni Scholarships

The alumni have established a limited number of scholarships. These scholarships are awarded by the Faculty Committee to the most outstanding applicants.

Scholarships by Baltimore Merchants

Baltimore merchants, through the Retail Merchants Association of Baltimore, have provided two scholarships of \$300 each for residents of the State of Maryland who have completed the junior year of the Practical Art curriculum. Each recipient must have shown proficiency and interest in merchandising.

Borden Agricultural and Home Economics Scholarships

A Borden Agricultural Scholarship of \$300 is granted to that student in the College of Agriculture who has had two or more of the regularly listed courses in dairying and, who, upon entering the senior year of study, has achieved the highest average grade of all other similarly eligible students in all preceding college work.

A Borden Home Economics Scholarship of \$300 is granted to that student in the College of Home Economics who has had two or more of the regularly listed courses in food and nutrition and, who, upon entering the senior year of study, has achieved the highest average grade of all other similarly eligible students in all preceding college work.

W. Atlee Burpee Company Scholarship Award in Horticulture

A scholarship award of \$100, open to upper class students in Horticulture at the University of Maryland, has been established by the W. Atlee Burpee Company, Seed Growers, Philadelphia, Pennsylvania, and Clinton, Iowa. Its purpose is to encourage and stimulate interest in flower and vegetable growing. The award is made on the basis of scholarship, experience, and interest in research.

The Danforth Foundation and the Ralston Purina Scholarships

The Danforth Foundation and the Ralston Purina Company of St. Louis offer two summer scholarships to outstanding students in the College of Agriculture, one for a student who has successfully completed his Junior year; the other for a student who has successfully completed his Freshman

year. The purpose of these scholarships is to bring together outstanding young men for leadership training.

The Danforth Foundation and the Ralston Purina Company of St. Louis offer four summer scholarships to outstanding Home Economics Students, two to Juniors and two to Freshmen. The purpose of these scholarships is to bring together outstanding young women for leadership training.

Dairy Technology Scholarships

The Dairy Technology Society of Maryland and District of Columbia has established a limited number of \$150 scholarships for students majoring in Dairy Products Technology. These scholarships are available both to high school graduates entering the University as freshmen and to students who have completed one or more years of their University curriculum. The purpose of these scholarships is to encourage and stimulate interest in the field of milk and milk products. The awards are based on scholarship, leadership, personality, need, experience, interest in and willingness to work in the field of dairy technology. The Dairy Technological Society cooperates with the Scholarship Committee of the University in making these awards.

Exel Scholarships

The largest grant for endowed scholarships was made by Deborah B. Exel. These scholarships are awarded by the Faculty Committee in accordance with the general principles underlying the award of all other scholarships.

William Randolph Hearst Scholarships

These scholarships have been established through a gift of the Baltimore News-Post, one of the Hearst newspapers, in honor of William Randolph Hearst. The undergraduate scholarship of \$400 annually is open to the graduate of any high school in America. The graduate scholarship of \$600 annually is open to the graduate of any college or university in America. These scholarships are awarded for special work in the University's program of American civilization.

The Hecht Company Merchandising Award

Three hundred dollars is offered by The Hecht Company of Washington to a resident of Maryland, or the District of Columbia, who is interested in merchandising as a career. The student must have completed the junior year of the Practical Arts curriculum and have met other specific requirements.

Home Economics Scholarships

Two thousand dollars has been made available for Home Economics Scholarships by Marie Mount.

Edward L. Israel Inter-faith Scholarship

The sum of \$300 is given to the student, who, upon entering the senior year, is adjudged to have contributed most to fostering inter-faith understanding and relations. This scholarship is in honor of the late Edward L. Israel and is sponsored by the National Hillel Foundation. The funds are given by the B'nai B'rith Federation of Maryland and the District of Columbia.

Kiwanis Scholarship

A Kiwanis Memorial Scholarship of \$200 per year is awarded by the Prince George County Kiwanis Club to a resident of Prince Georges County, Maryland, who in addition to possessing the necessary qualifications for maintaining a satisfactory scholarship record, must have a reputation for high character and attainment in general all-around citizenship.

Helen Aletta Linthicum Scholarships

These scholarships, several in number, have been established through the benefaction of the late Mrs. Helen Aletta Linthicum, widow of the late Congressman Charles J. Linthicum, who served in Congress from the Fourth District of Maryland for many years. These scholarships are known as the Helen Aletta Linthicum scholarships. They are granted only to worthy young men and women who are residents of the State of Maryland and who have satisfactory high school records, forceful personality, a reputation for splendid character and citizenship, and the determination to get ahead.

Dr. Frank C. Marino Scholarship

Dr. Frank C. Marino has established a \$200 annual scholarship in Nursing Education. As vacancies in this scholarship occur, it is awarded by the Scholarship Committee to a student who demonstrates special interest and promise in this field.

Maryland Distillers' Association Scholarships

The Maryland Distillers' Association makes an annual grant of \$3,000 to create a limited number of scholarships. These scholarships will be available in accordance with vacancies, and as long as the Association provides the funds.

Maryland Educational Foundation Scholarships

The Maryland Educational Foundation provides funds each year for the education of several outstanding young men. These scholarships are awarded by the Faculty Committee to the most outstanding applicants.

The Sears Roebuck Foundation Scholarships

Ten scholarships of \$165 each are granted by the Sears Roebuck Foundation to the sons of farmers in the State of Maryland who enroll in the freshman class of the College of Agriculture of this University. One \$200

scholarship is granted each year to the sophomore student in the College of Agriculture who proved to be the outstanding student on a Sears Roebuck scholarship the previous year. These scholarships are awarded by the Faculty Committee in accordance with the terms of the grant.

Loan Funds

A. A. U. W. Loan. The College Park Branch of the American Association of University Women maintains a fund from which loans are made to women students of junior or senior standing who have been in attendance at the University of Maryland for at least one year.

American Bankers Association Scholarship Loan Fund. A loan fund of \$250 for one year only limited to students in the senior year or in graduate work in banking, economics, or related subjects in classes of senior grade or above.

Catherine Moore Brinkley Loan Fund. Under the provisions of the will of Catherine Moore Brinkley, a loan fund has been established, available for worthy students who are natives and residents of the State of Maryland, studying mechanical engineering or agriculture at the University of Maryland.

Home Economics Loan Fund. A loan fund, established by the District of Columbia Home Economics Association, is available for students majoring in Home Economics.

The Kappa Kappa Gamma Sorority Loan. Annually a Sigma Delta loan of one hundred dollars, without interest, is made to a woman student registered in the University of Maryland.

Student Employment

A considerable number of students earn some money through employment while in attendance at the University. No student should expect, however, to earn enough to pay all of his expenses. The amounts vary, but some earn from one-fourth to three-fourths of all the required funds.

Generally the first year is the hardest for those desiring employment. After one has demonstrated that he is worthy and capable, there is much less difficulty in finding work.

The University assumes no responsibility in connection with employment. It does, however, make every effort to aid needy students. The nearby towns and the University are canvassed, and a list of available positions is placed at the disposal of students. Applications for employment should be made to the Dean of Men.

Procedures in Applying for Scholarships and Student Aid

All requests for information concerning scholarships and student aid should be addressed to the Chairman of the Scholarship Committee, University of Maryland, College Park, Maryland. Regulations and procedures for the award of scholarships are formulated by this committee.

ATHLETICS AND RECREATION

The University recognizes the importance of the physical development of all students, and besides the required physical education for freshmen and sophomores sponsors a comprehensive intercollegiate and intramural program. Students are encouraged to participate in competitive athletics and to learn the skill of games that may be carried on after leaving college. The intramural program which covers a large variety of sports is conducted by the Physical Education Department for both men and women.

A full program in intercollegiate athletics is sponsored under the supervision of the Council on Intercollegiate Athletics. The University is a member of the Southern Conference, the National Collegiate Athletic Association, the United States Intercollegiate Lacrosse Association, Intercollegiate Amateur Athletic Association of America, and cooperates with other national organizations in the promotion of amateur athletics.

Excellent facilities are available for carrying on the activities of the program in physical development. The University has two modern gymnasias, a coliseum, a large armory, a number of athletic fields, tennis courts, baseball diamonds, running tracks and the like constituting the major portion of the equipment.

EXTRA-CURRICULAR STUDENT ACTIVITIES

The following description of student activities covers those of the undergraduate divisions of College Park. The descriptions of those in the Baltimore divisions are included elsewhere.

STUDENT GOVERNMENT

Regulation of Student Activities. The association of students in organized bodies for the purpose of carrying on voluntary student activities in orderly and productive ways, is recognized and encouraged. All organized student activities are under the supervision of the Student Life Committee. Such organizations are formed only with the consent of the Student Life Committee and the approval of the President. Without such consent and approval no student organization which in any way represents the University before the public, or which purports to be a University organization or an organization of University students, may use the name of the University in connection with its own name, or in connection with its members as students.

Student Government. The Student Government Association consists of the Executive Council, the Women's League, and the Men's League, and operates under its own constitution. Its officers are a president, a vice-president, a secretary, a treasurer, president of Women's League, and president of Men's League.

The Executive Council is the over-all student governing body and performs the executive duties incident to managing student affairs and works in cooperation with the Student Life Committee.

The Women's League, in cooperation with the Office of the Dean of Women, handles all matters pertaining to women students.

The Men's League, in cooperation with the Office of the Dean of Men, handles all matters pertaining to men students.

The Student Life Committee, a faculty committee appointed by the President, keeps in close touch with all activities and conditions, excepting classroom work, that affect the student, and, acting in an advisory capacity, endeavors to improve any unsatisfactory conditions that may exist.

A pamphlet entitled *Academic Regulations*, issued annually and distributed to the students in the fall, contains full information concerning student matters as well as a statement of the rules of the University.

Eligibility to Represent the University. Only students in good standing are eligible to represent the University in extra-curricular contests. In addition, various student organizations have established certain other requirements. To compete in varsity athletics a student must pass the required number of hours as determined by the Athletic Board.

Discipline. In the government of the University, the President and faculty rely chiefly upon the sense of responsibility of the students. The student who pursues his studies diligently, attends classes regularly, lives honorably and maintains good behavior meets this responsibility. In the interest of the general welfare of the University, those who fail to maintain these standards are asked to withdraw. Students are under the direct supervision of the University only when on the campus, attending an approved function or representing the University, but they are responsible to the University for their conduct wherever they may be.

HONORS AND AWARDS

Scholarship Honors. Final honors for excellence in scholarship are awarded to one-fifth of the graduating class in each college. *First honors* are awarded to the upper half of this group; *second honors* to the lower half. To be eligible for honors, at least two years of resident work must be completed, and the average must be B (3.00) or higher.

The Goddard Medal. The James Douglas Goddard Memorial Medal is awarded annually to the resident of Prince Georges County, born therein, who makes the highest average in his studies and who at the same time embodies the most manly attributes. The medal is given by Mrs. Anne K. Goddard James, of Washington, D. C.

Sigma Chi Cup. Sigma Chi Fraternity offers annually a cup to the man in the freshman class who makes the highest scholastic average during the first semester.

Alpha Zeta Medal. The Honorary Agricultural Fraternity of Alpha Zeta awards annually a medal to the agricultural student in the freshman class who attains the highest average record in academic work. The mere pre-

sentation of the medal does not elect the student to the fraternity, but simply indicates recognition of high scholarship.

Dinah Berman Memorial Medal. The Dinah Berman Memorial Medal is awarded annually to the sophomore who has attained the highest scholastic average of his class in the College of Engineering. The medal is given by Benjamin Berman.

Delta Delta Delta Medal. This sorority awards a medal annually to the girl who attains the highest average in academic work during the sophomore year.

Omicron Nu Sorority Medal. This sorority awards a medal annually to the freshman girl in the College of Home Economics who attains the highest scholastic average during the first semester.

Bernard L. Crozier Award. The Maryland Association of Engineers awards a cash prize of \$25.00 annually to the senior in the College of Engineering who, in the opinion of the faculty, has made the greatest improvement in scholarship during his stay at the University.

Alpha Lambda Delta Award. The Alpha Lambda Delta Award is given to the senior member of the group who has maintained the highest average for the past three and one-half years. She must have been in attendance in the institution for the entire time.

American Society of Civil Engineers Award. The Maryland Section of the American Society of Civil Engineers awards annually a junior membership in the American Society of Civil Engineers to the senior in the Department of Civil Engineering who has the highest scholastic standing.

Tau Beta Pi Award. The Maryland Beta Chapter of Tau Beta Pi awards annually an engineers' handbook to the junior in the College of Engineering who, during his sophomore year, has made the greatest improvement in scholarship over that of his freshman year.

Sigma Alpha Omicron Award. This is awarded to the senior student majoring in Bacteriology for high scholarship, character and leadership.

Delta Gamma Scholarship Award is offered to the woman member of the graduating class who has achieved the highest scholastic average for her entire course.

The Charles B. Hale Dramatic Awards. The Footlight Club recognizes annually the man and woman members of the senior class who have done most for the advancement of dramatics at the University.

The Philip W. Pillsbury Shelf of Home Economics Books is awarded to the highest ranking student in the graduating class of the College of Home Economics.

Rabbi Edward L. Israel Interfaith Scholarship of \$300 is awarded by the B'nai B'rith Lodges of Maryland and Washington, D. C., to the student in the junior class who has done most to improve interfaith relations on the campus.

CITIZENSHIP AWARDS

Citizenship Prize for Men. An award is presented annually by President H. C. Byrd, a graduate of the Class of 1908, to the member of the senior class who, during his collegiate career, has most nearly typified the model citizen, and has done most for the general advancement of the interests of the University.

Citizenship Prize for Women. The Citizenship Prize is offered by Mrs. Albert F. Woods, wife of a former president of the University of Maryland, to the woman member of the senior class who, during her collegiate career, has most nearly typified the model citizen, and has done most for the general advancement of the interests of the University.

MILITARY AWARDS

Mahlon N. Haines '94 Trophy. This is offered to the major of the winning battalion.

Military Department Award. Gold second lieutenant's insignia to the major of the winning battalion.

The Governor's Cup. This is offered each year by His Excellency, the Governor of Maryland, to the best drilled company.

Company Award. The Reserve Officers' Association, Montgomery County Chapter, awards annually to the captain of the best drilled company of the University, gold second lieutenant's insignia.

The Alumni Cup. The Alumni offer each year a cup to the commanding officer of the best drilled platoon.

Scabard and Blade Cup. This cup is offered to the commander of the winning platoon.

Class of '99 Gold Medal. The class of 1899 offers each year a gold medal to the member of the battalion who proves himself the best drilled soldier.

The Meeks Trophy is awarded to the member of the varsity R. O. T. C. Rifle Team who fired the high score of each season.

A **Gold Medal** is awarded to the member of the Freshman Rifle Team who fired the high score of each season.

Pershing Rifle Medals are awarded to each member of the winning squad in the squad drill competition.

Pershing Rifle Medals are awarded to the three best drilled students in Pershing Rifles.

Mehring Trophy Rifle Competition. A **Gold Medal** is awarded to the student firing highest score in this competition.

Air Force Association Medal. A silver medal awarded to the outstanding first-year student in the advanced Air R. O. T. C. course based on scholastic grades, both general and military, individual characteristics and the performance during the period of summer camp.

Army Transportation Association Awards. Citation to the most outstanding student in the First Year Advanced Transportation Corps, R. O. T. C., based on scholastic and military standing and leadership displayed. Citation and watch chain with key for most outstanding member of the second-year class; basis of award same as above.

ATHLETIC AWARDS

Silvester Watch for Excellence in Athletics. A gold watch is offered annually to "the man who typified the best in college athletics." The watch is given in honor of a former President of the University, R. W. Silvester.

Maryland Ring. The Maryland Ring is offered by Charles L. Linhardt to the Maryland man who is adjudged the best athlete of the year.

Edward Powell Trophy. This trophy is offered by the class of 1913 to the player who has rendered the greatest service to lacrosse during the year.

Louis W. Berger Trophy. This trophy is awarded to the outstanding senior baseball player.

STUDENT GOVERNMENT AWARDS

Medals are awarded to members of the Executive Committee of the Student Government Association who faithfully perform their duties throughout the year.

RELIGIOUS INFLUENCES

The University recognizes its responsibility for the welfare of the students, not solely in their intellectual growth, but as human personalities whose development along all lines, including the moral and religious, is included in the educational process. Pastors representing the major denominational bodies assume responsibility for work with the students of their respective faiths. Church attendance is encouraged.

Religious Life Committee. A faculty committee on religious affairs and social service has as its principal function the stimulation of religious thought and activity on the campus. It brings noted speakers on religious subjects to the campus from time to time. The committee cooperates with the Student Religious Council and the student pastors and assists the student denominational clubs in every way that it can. Opportunities are provided for students to consult with pastors representing the denominations of their choice.

While there is no attempt to interfere with anyone's religious beliefs, the importance of religion is recognized officially and religious activities are encouraged.

Denominational Clubs. Several religious clubs have been organized among the students for their mutual benefit and to undertake certain types of service. This year the list includes the Baptist Student Union, the Canterbury Club (Episcopal), the Albright-Otterbein Club (Evangelical United Brethren), Disciples of Christ, the Christian Science Club, the Friends' Uni-

versity Group, the Hillel Foundation (Jewish), the Lutheran Club, the Newman Club (Catholic), Maryland Christian Fellowship, the Pre-theological Group, the Religious Philosophy Study Group, the Wesley Foundation (Methodist), and the Westminster Foundation (Presbyterian). These clubs meet regularly for worship and discussion, and occasionally for social purposes. A pastor or a member of the faculty serves as adviser.

FRATERNITIES, SORORITIES, SOCIETIES AND CLUBS

General Statement

Fraternities and sororities, as well as all other clubs and organizations recognized by the University, are expected to conduct their social and financial activities in accordance with the rules of good conduct and upon sound business principles. Where such rules and principles are observed, individual members will profit by the experience of the whole group, and thereby become better fitted for their life's work after graduation. Rules governing the different activities will be found in the list of Academic Regulations.

Honorary Fraternities. Honorary fraternities and societies in the University at College Park are organized to uphold scholastic and cultural standards. These are Phi Kappa Phi, a national honorary fraternity open to honor students, both men and women, in all branches of learning; Sigma Xi, an honorary scientific fraternity; Omicron Delta Kappa, men's national honor society, recognizing conspicuous attainment in non-curricular activities and general leadership; Mortar Board, the national senior honor society for women recognizing service, leadership and scholarship; Alpha Lambda Delta, a national freshmen women's scholastic society requiring a 3.5 average; Phi Eta Sigma, national freshmen honor society for men. A group of honorary fraternities encourage development in specialized endeavor. These are Alpha Zeta, a national honorary agriculture fraternity recognizing scholarship and student leadership; Tau Beta Pi, a national honorary engineering fraternity; Phi Delta Kappa, a professional educational fraternity; Scabbard and Blade, a national military society; Pershing Rifles, a national military society for basic course R. O. T. C. students; Pi Delta Epsilon, a national journalistic fraternity; Omicron Nu, a national home economics society; Beta Alpha Psi, a national accounting honorary fraternity; Beta Gamma Sigma, a national honorary commerce fraternity; Alpha Kappa Delta, a national honorary sociology fraternity; Sigma Alpha Omicron, a national honorary bacteriology fraternity; Pi Sigma Alpha, an honorary political science fraternity; Sigma Tau Epsilon, honorary for the Women's Recreation Association; Iota Lambda Sigma, a national professional education fraternity; National Collegiate Players, a national honorary dramatic fraternity; Sigma Pi Sigma, a national physics honorary; and "M" Club, honorary athletic organization.

Fraternities and Sororities. There are twenty national fraternities, five local fraternities and fifteen national sororities at College Park.

These in the order of their establishment at the University are: Kappa Alpha, Sigma Nu, Phi Sigma Kappa, Delta Sigma Phi, Alpha Gamma Rho, Theta Chi, Phi Alpha, Tau Epsilon Phi, Alpha Tau Omega, Phi Delta Theta, Lambda Chi Alpha, Alpha Chi Sigma (chemical), Sigma Alpha Mu, Alpha Epsilon Pi, Phi Kappa Sigma, Sigma Chi, Sigma Alpha Epsilon, Tau Kappa Epsilon, Zeta Beta Tau, Delta Tau Delta, national fraternities; Alpha Omicron Pi, Kappa Kappa Gamma, Kappa Delta, Delta Delta, Delta, Alpha Xi Delta, Phi Sigma Sigma, Alpha Delta Pi, Sigma Kappa, Gamma Phi Beta, Alpha Epsilon Phi, Pi Beta Phi, Delta Gamma, Kappa Alpha Theta, Alpha Gamma Delta, and Alpha Chi Omega, national sororities; Sigma Pi, Alpha Alpha, Phi Kappa Tau, Sigma Phi Epsilon, and Delta Epsilon Kappa, local fraternities.

Clubs and Societies. Many clubs and societies, with literary, art, cultural, scientific, social and other special objectives are maintained in the University. Some of these are purely student organizations; others are conducted jointly by students and members of the faculty. The list follows:

Civic and Service Organizations. Interfraternity Council, Panhellenic Council, Independent Students' Association, Daydodgers' Club, Association of Veterans, Student Unit of the American Red Cross, Latch Key, Alpha Phi Omega (national service fraternity), Chinese Student Club, and Graduate Club.

Subject-Matter Organizations. Argicultural Council, Engineering Council, American Society of Mechanical Engineers, American Society of Civil Engineers, American Institute of Electrical Engineers, Student Affiliate of the American Chemical Society, Farm Economics Club, Block and Bridle Club, Student Port of Propeller Club, Plant Industry Club, Home Economics Club, Graduate History Club, Harold Benjamin Chapter of Future Teachers of America, Physical Education Majors Club, American Institute of Electrical Engineers and Institute of Radio Engineers, Industrial Education Association, and Childhood Education Club.

General Organizations. Student Grange, International Relations Club, Future Farmers of America, Psychology Club, Sociology Club, French Club, German Club, Spanish Club, Collegiate 4-H Club, Women's Recreation Association, Collegiate Chamber of Commerce, Cosmopolitan Club, Round-table Club, and International Club.

Recreational Organizations. Rossborough Club (large campus dances), Footlight Club, Men's Glee Club, Women's Chorus, Clef and Key, Riding Club, Terrapin Trail Club, Gymkana Club, Swimming Club, Camera Club, Ballroom Dance Club (instructional group), Radio Club, Chess Club, Art Club, Authorship Club, University Orchestra, Sailing Club, Judo Club, Radio-Maryland, and Modern Dance Club.

UNIVERSITY AND R. O. T. C. BANDS

The University of Maryland Student Band and the R. O. T. C. Band are two separate musical organizations at the University, existing for the pur-

pose of furthering the musical knowledge of interested students. The R. O. T. C. Band functions under the Military Department. The Student Band is under the direction of the Music Department and is assisted by the Military Department. The instruction of both bands is conducted by an experienced bandmaster.

STUDENT PUBLICATIONS

Four student publications are conducted under the general supervision of the Student Publications Board.

The Diamondback, a newspaper, summarizes the University news, and provides a medium for the discussion of matters of interest to the students and the faculty.

The Terrapin, the annual, is a reflection of campus activities, serving to commemorate the principal events of the college year.

The Old Line, a literary, humorous and art magazine, published periodically.

The "M" Book, a handbook issued for the benefit of incoming students, is designed to acquaint them with general University life.

UNIVERSITY POST OFFICE

The University operates an office for the reception, dispatch and delivery of United States mail, including Parcel Post packages, and for inter-office communications. This office is located in the basement of the Administration Building. The campus post office is *not a part of the United States Postal System* and no facilities are available for sending or receiving postal money orders. Postage stamps, however, may be purchased. United States mail is received at 8:30 A. M. and 2:00 P. M. and dispatched at 11:15 A. M. and 4:15 P. M. daily.

Each student in the University is assigned a Post Office box at the time of registration, for which a small fee is charged. Also, boxes are provided for the various University offices.

One of the major reasons for the operation of the Post Office is to provide a convenient method by which Deans, teachers and University officials may communicate with students, therefore students are expected to call for their mail daily, if possible, in order that such communications may come to their attention promptly.

STUDENTS' SUPPLY STORE

For the convenience of students, the University maintains a Students' Supply Store, located in the basement of the Administration Building, where students may obtain at reasonable prices text books, classroom materials and equipment. The store also carries jewelry, stationery, fountain pens and novelty items.

This store is operated on a basis of furnishing students needed books and supplies at as low a cost as practicable, and profits, if any, are turned

into the general University treasury to be used for promoting general student welfare.

Because of heavy demand for text books at the beginning of each semester the Students' Supply Store operates a temporary annex on the campus. Location of this annex is posted at registration.

ALUMNI

The Alumni Council, composed of three representatives from each School and College in the University, coordinates all general alumni interests and activities. The Council membership includes three representatives from each of the organized alumni associations for the Schools of Agriculture, Arts and Sciences, Business and Public Administration, Dental, Education, Engineering, Home Economics, Law, Medical, Nursing, and Pharmacy.

Council activities include the alumni publication *Maryland*, a scholarship program, an annual Homecoming affair at College Park, and a Charter Day celebration in Baltimore on January 20. Membership in the University of Maryland Alumni Association is automatically obtained through affiliation with one of the school organizations. Each School and College Alumni Association exerts an active interest in the welfare of its respective graduates and the University of Maryland. Objectives of the general Association include the promotion of the interests and welfare of the University of Maryland and efforts to further mutually beneficial relations between the University of Maryland, the people of the State, and the alumni.

"Maryland" Magazine

Maryland, a bi-monthly magazine issued jointly by the Alumni Association and the University, is primarily an alumni publication. However, it publishes also articles of general interest, feature articles written by faculty members and alumni, campus news, and sports news. It is a general University of Maryland publication of reader interest to the alumni as well as the student body, next of kin of students, faculty members and Maryland residents in general.



THE ACADEMIC DIVISIONS

The academic divisions at the University of Maryland are constituted for the purpose of drawing into closer relationship the scholars among both students and faculty in related departments of study who are faced with common problems and the need for an exchange of experience in reference to progress underway which is of common interest extending beyond the bounds of individual departments.

In addition to the functions of coordinating the work of related departments and stimulating scholarship in a broad subject field, it is more particularly the duty of divisions, through their chairmen, to sanction needed interdepartmental cooperative projects; check and report possible duplication of effort; and in general, to serve as advisory bodies to the General Administrative Board.

The chairmen of the divisions are chosen by the General Administrative Board, of which body they are members.

Five academic divisions have been established in the University to date. These are:

- The Lower Division
- The Division of Biological Sciences
- The Division of Physical Sciences
- The Division of Humanities
- The Division of Social Sciences

At the present time these divisions are constituted as follows:

THE LOWER DIVISION

CHAIRMAN, DR. CHARLES E. WHITE, *Professor of Chemistry*

Student programs in Freshman and Sophomore years of the University are under the general oversight of a faculty committee known as the Lower Division Committee. The members of this committee are especially selected because of their interest in student growth and development in Freshman and Sophomore years. They are drawn from the faculties of all of the departments in the University whose responsibility it is to offer courses to students in these years.

It is the function of the Lower Division Committee to consider the general problem of courses which should be open to students in Freshman and Sophomore years; the articulation of these courses in terms of the curricula needs of the several colleges; and, in general, to stimulate interest in learning and teaching at this level.

THE DIVISION OF BIOLOGICAL SCIENCES

CHAIRMAN, DR. RONALD BAMFORD, *Professor of Botany*

The Division of Biological Sciences includes the departments of Bacteriology, Botany, Entomology, Zoology and Genetics, and representatives of other departments interested in this field.

THE DIVISION OF HUMANITIES

CHAIRMAN, DR. ADOLF E. ZUCKER, *Professor of Foreign Languages*

The Division of Humanities includes the departments of Art, Classical Languages and Literatures, English Language and Literature, Foreign Languages and Literatures, Music, Practical Art, Philosophy, Speech, and representatives of other departments interested in this field.

THE DIVISION OF PHYSICAL SCIENCES

CHAIRMAN, DR. WILBERT J. HUFF, *Professor of Chemical Engineering*

The Division of Physical Sciences includes the departments of Astronomy, Chemistry, Geology, Mathematics, Physics, and representatives of other departments interested in this field.

THE DIVISION OF SOCIAL SCIENCES

CHAIRMAN, DR. HAROLD C. HOFFSOMMER, *Professor of Sociology*

The Division of Social Sciences includes the departments of Economics, Agricultural Economics, History, Home Management, Government and Politics, Psychology, Sociology, and representatives of other departments interested in this field.

Campus Scene, College Park



CURRICULA AND PROGRAMS

AT COLLEGE PARK, MARYLAND

College of Agriculture. The College of Agriculture offers curricula leading to the degree of Bachelor of Science in General Agriculture; Agricultural Chemistry; Agricultural Economics and Marketing; Agricultural Education and Rural Life; Agriculture-Engineering; Agronomy (crops and soils); Animal Husbandry; Botany (plant cytology, morphology and taxonomy; plant pathology; and plant physiology and ecology); Dairy (dairy husbandry and dairy products technology); Entomology; Horticulture (pomology and olericulture, floriculture and ornamental horticulture and commercial processing of horticultural crops); and Poultry Husbandry.

College of Arts and Sciences. The College of Arts and Sciences provides liberal training leading to the degrees of Bachelor of Arts and Bachelor of Science. Curricula are offered in Art, Bacteriology, Medical Technology, Chemistry, English, Foreign Languages (French, German, Spanish, Russian and Hebrew), History, Journalism, Mathematics, Physics, General Physical Sciences, Philosophy, Pre-dental, Pre-law, Pre-medical, Pre-nursing, Psychology, Sociology, Social Service, Crime Control, Speech, Zoology, and Fisheries Biology.

The College of Arts and Sciences offers combined degrees with the Schools of Medicine, Law, and Nursing.

College of Business and Public Administration. The College of Business and Public Administration offers curricula leading to a Bachelor of Science degree in Business Organization and Administration, Public Administration, Economics, Geography, Government and Politics, and Office Techniques and Management.

College of Education. The College of Education offers curricula leading to the degrees of Bachelor of Arts and Bachelor of Science. Curricula are offered in Academic Education, Art Education, Business Education, Dental Education, Elementary Education, Home Economics Education, Industrial Education, Music Education, Nursery School-Kindergarten Education, Nursing Education, Physical Education, Health Education, and Recreation.

College of Engineering. The College of Engineering offers curricula leading to a Bachelor of Science degree in Aeronautical Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, and Mechanical Engineering.

College of Home Economics. The College of Home Economics offers curricula leading to the degree of Bachelor of Science in General Home Economics, Foods and Nutrition, Home Economics Education, Institution Management, Home Economics Extension, Textiles and Clothing, and Practical Art.

College of Military Science, Physical Education and Recreation. The College of Military Science, Physical Education and Recreation offers curricula leading to the degree of Bachelor of Science in Military Science, Physical Education, Health, and Recreation. This College conducts the required physical activities program of the freshman and sophomore years designed to correct and improve the physical development of all students. The Reserve Officers Training Corps, established by the departments of the Army and Air Force in cooperation with the University, is likewise a major department of this College. Two years of training in this type of citizenship, military science and tactics are required of all male students under the age of thirty years. Students who are accepted may pursue an advanced course in this field which will lead to a reserve commission in the Army of the United States.

College of Special and Continuation Studies. The College of Special and Continuation Studies provides a limited program of late afternoon and evening and Saturday morning courses both on and off campus for mature students who have full-time employment or who, for other reasons, cannot follow a full-time program of studies at College Park. These studies are offered at both the graduate and undergraduate levels. This College also conducts a special program for high school graduates whose secondary school preparation may be deficient in certain minor details.

Summer School. The Summer School of six weeks duration provides programs of study to persons who find it convenient to attend the University during the summer months. Instruction is offered in most of the departments of the University. In the College of Education the offerings are considerably expanded. Teachers in service and other persons who are employed during the regular school year find a wide variety of courses available.

Graduate School. The Graduate School has general jurisdiction over the graduate courses offered in the departments of the University at College Park and Baltimore. Through a program of inter-departmental cooperation under the immediate direction of this School, the University confers the degrees of Master of Arts, Master of Science, Master of Arts in American Civilization, Master of Business Administration, Master of Education, Doctor of Education, and Doctor of Philosophy. The graduate faculty includes all members of the various faculties who give instruction in approved graduate courses.

AT BALTIMORE

The Schools of Dentistry, Law, Medicine, Nursing and Pharmacy offer curricula leading to professional degrees in their respective fields. See separate catalog listings on back cover.

College of
AGRICULTURE

STAFF*

Thomas B. Symons, M.S., D.Agr., Dean

Roger B. Corbett, Ph.D., Associate Dean

GEORGE JENVEY ABRAMS, M. S., Assistant Professor of Apiculture.

ARTHUR M. AHALT, M.S., Professor and Head of Agricultural Education.

CHARLES O. APPLEMAN, Ph.D., Professor of Plant Physiology.

JOHN HAROLD AXLEY, Ph.D., Associate Professor of Soils.

OLIVER E. BAKER, Ph.D., Professor of Economic Geography.

RONALD BAMFORD, Ph.D., Professor and Head of Botany.

GEORGE MAX BEAL, Ph.D., Professor of Agricultural Economics and Marketing.

PHILIP BRIERLEY, Ph.D., Lecturer in Botany.

RUSSELL GUY BROWN, Ph.D., Associate Professor of Botany.

ARTHUR L. BRUECKNER, B.S., V.M.D., Professor of Veterinary Science.

JOHN BURIC, B.S., Instructor of Animal Husbandry.

GORDON MANN CAIRNS, Ph.D., Professor and Head of Dairy Husbandry.

RAY WILFORD CARPENTER, A.B., LL.B., Professor and Head of Agricultural Engineering.

JOHN M. COFFIN, V.M.D., Associate Professor of Veterinary Science.

GERALD FUSON COMBS, Ph.S., Professor of Poultry Husbandry.

PARDON W. CORNELL, M.S., Associate Professor of Ornamental Horticulture.

ERNEST NEAL CORY, Ph. D., Professor and Head of Entomology.

CARROLL EASTBURN COX, Ph.D., Associate Professor of Plant Pathology.

HARRY DENGLER, B.S., Associate Professor of Forestry.

SAMUEL HENRY DEVAULT, Ph.D., Professor and Head of Agricultural Economics and Marketing.

HAROLD M. DEVOLT, B.S., M.S., D.V.M., Professor of Poultry Pathology.

MATTHEW FRANKLIN ELLMORE, B.S., Instructor of Dairy Husbandry.

HUMPHREY FINNEY, Lecturer in Animal Husbandry.

JOHN ERWIN FOSTER, Ph.D., Professor and Head of Animal Husbandry.

HUGH GILBERT GAUCH, Ph.D., Associate Professor of Plant Pathology.

GUY WATSON GIENGER, M.S., Associate Professor of Agricultural Engineering.

WILLARD WYNN GREEN, Ph.D., Professor of Animal Husbandry.

JAMES MARTIN GWIN, M.S., Professor of Poultry Husbandry.

ARTHUR BRYAN HAMILTON, M.S., Associate Professor of Agricultural Economics and Farm Management.

IRVIN CHARLES HAUT, Ph.D., Professor and Head of Horticulture.

ELIZABETH EDGE HAVILAND, Ph.D., Assistant Professor of Entomology.

* Many of the members of the Instructional staff are also on the staff of the Extension Service, or the Experiment Station staff, or both. Lists of the staffs of these two agencies appear elsewhere in this publication.

- RAYMOND WILLIAM HOECKER, Ph.D., Professor of Agricultural Economics and Marketing.
- WALTER FULTON JEFFERS, Ph.D., Associate Professor of Plant Pathology.
- ROBERT ANDREW JEHLE, Ph.D., Professor of Plant Pathology.
- BRUCE CARLEY JOHNSON, B.S., Instructor of Dairy Manufacturing.
- MORLEY ALLAN JULL, Ph.D., Professor and Head of Poultry Husbandry.
- MALCOLM HENDERSON KERR, M.S., Associate Professor of Animal Husbandry.
- ALBIN OWINGS KUHN, Ph.D., Professor and Head of Agronomy.
- CONRAD LIDEN, B.S., Instructor of Agronomy.
- CONRAD BARNETT LINK, Ph.D., Professor of Floriculture.
- ELLIS MARTIN, B.S., Laboratory Assistant in Agricultural Engineering.
- JOHN EDWIN MOORE, B.S., Instructor in Plant Pathology.
- DELBERT THOMAS MORGAN, Ph.D., Assistant Professor of Botany.
- JOHN B. S. NORTON, D.Sc., Professor (Emeritus) of Botany.
- SAMUEL C. MUNSON, M.S., Lecturer in Entomology.
- JAMES BURTON OUTHOUSE, M.S., Associate Professor of Animal Husbandry.
- PAUL ROUTZAHN POFFENBERGER, M.S., Associate Professor of Agricultural Economics and Marketing.
- GEORGE DEWITTE QUIGLEY, B.S., Associate Professor of Poultry Husbandry.
- ROBERT DUBOIS RAPPLEYE, M.S., Instructor in Botany.
- REGINALD L. REAGAN, Associate Professor of Veterinary Virology.
- THOMAS E. RONNINGEN, M.S., Assistant Professor of Agronomy.
- ALBERT LEE SCHRADER, Ph.D., Professor of Pomology.
- LELAND EDWARDS SCOTT, Ph.D., Professor of Horticultural Physiology.
- CLYNE SAMUEL SHAFFNER, Ph.D., Professor of Poultry Husbandry.
- JAMES B. SHANKS, Ph.D., Associate Professor of Floriculture.
- JOSEPH CLEMENT SHAW, Ph.D., Professor of Dairy Husbandry.
- HOWARD H. SHEPHERD, Ph.D., Lecturer in Entomology.
- MARK MERCER SHOEMAKER, M.L.D., Associate Professor of Horticulture.
- STANLEY CABELL SHULL, M.S., Associate Professor of Agricultural Economics and Marketing.
- ROBERT SNODGRASS, B.S., Lecturer in Entomology.
- FRANCIS C. STARK, Ph.D., Assistant Professor of Vegetable Crops.
- GOTTHOLD STEINER, Ph.D., Lecturer in Plant Pathology.
- ROBERT EUGENE STOUT, B.S., Instructor in Dairy Manufacturing.
- ROYAL PRICE THOMAS, Ph.D., Professor of Soils.
- GEORGE BRITTON VOGT, B.S., Assistant Professor of Entomology.
- WILLIAM PAUL WALKER, M.S., Associate Professor of Agricultural Economics.
- EDGAR PERKINS WALLS, Ph.D., Professor of Canning Crops.
- FREDERICK GAIL WARREN, Ph.D., Associate Professor of Dairy Manufacturing.
- LESLIE O. WEAVER, Ph.D., Assistant Professor of Plant Pathology.

COLLEGE OF AGRICULTURETHOMAS B. SYMONS, M.S., D.Agr., *Dean*ROGER B. CORBETT, Ph.D., *Associate Dean*

The College of Agriculture offers both general and specialized training for students who wish to prepare for professional work in the broad field of agricultural endeavor. Student programs are arranged with a view to correlating technical work with related sciences and cultural subjects. Education in fundamentals receives special attention. Accordingly, young men and women are given a basic general education while they are being instructed in the various branches of agriculture. In addition to offering this opportunity for thorough grounding in the related basic natural and social sciences, it is an objective of the College to provide trained personnel for agricultural and allied industries. This personnel is recruited from rural and urban areas. Farm-reared students enter either general or specialized curricula; city-reared students tend to follow the specialized programs.

History

The College of Agriculture is the oldest division of the University of Maryland at College Park. The institution was chartered in 1856 under the name of the Maryland Agricultural College. For three years the College was under private management. When Congress passed the Land Grant Act in 1862, the General Assembly of Maryland accepted it for the State and named the Maryland Agricultural College as the beneficiary. When the institution was merged in 1920 with the University of Maryland in Baltimore, the College of Agriculture took its place as one of the major divisions of this larger, more comprehensive organization.

In addition to teaching, the College of Agriculture includes the Agricultural Experiment Station and the Extension Service. They were established as the result of acts passed by Congress in 1887 and 1914 respectively. A more complete description of these two services appear later in this bulletin.

General

The College provides curricula for those who wish to engage in general farming, livestock production, dairying, poultry husbandry, fruit or vegetable growing, floriculture or ornamental horticulture, field crop production, or in the highly specialized scientific activities connected with these industries. It prepares men to serve as farm managers, for positions with commercial concerns related to agriculture, for responsible positions as teachers in agricultural colleges and in departments of vocational agriculture in high schools or as investigators in experiment stations, for extension work, for regulatory activities, and for service in the United States Department of Agriculture.

Through research the frontiers of knowledge relating to agriculture and the fundamental sciences underlying it are constantly being extended and solutions for important problems are being found. Research projects in many fields are in progress. Students taking courses in agriculture from instructors who devote part time to research, or are closely associated with it, are kept in close touch with the latest discoveries and developments in the investigations under way. The findings of these research scientists provide valuable information for use in classrooms, and make instruction virile and authentic. The results of the most recent scientific investigations are constantly before the student.

Close contact of workers in the College with the problems of farmers and their families in all parts of the State, through the county agents, home demonstration agents, and specialists brings additional life to resident instruction in the College of Agriculture. These contacts operate in two ways: problems confronting rural people are brought to the attention of research workers and the instructional staff, and results of research are taken to farmers and their families in their home communities through practical demonstrations. Hence the problems of the people of the State contribute to the strength of the College of Agriculture, and the College helps them in the improvement of agriculture and rural life.

Through their regulatory functions, certain trained workers in the College of Agriculture are continually dealing with the actual problems associated with the improvement and maintenance of the standards of farm products and animals. Regulatory and control work extends over a wide range of activities and is concerned with reducing the losses due to insect pests and diseases; preventing and controlling serious outbreaks of diseases and pests of animals and plants; analyzing fertilizers, feed, and limes for guaranteed quality; and analyzing and testing germination quality of seeds to insure better seeds for farm planting.

These fields contribute largely to agricultural education, as standardization and education go hand in hand in the development of an industry. Direct contact on the part of professors in their respective departments with the problems and methods involved makes for effective instruction.

Special Advantages

The University of Maryland is within a few miles of the Beltsville Research Center of the U. S. Department of Agriculture. This is the largest, best manned, and best equipped agriculture research agency in the world. Also, the University of Maryland, is within a few miles of the Washington, D. C., offices of the U. S. Department of Agriculture and other government departments, including the Library of Congress. Students can easily visit these agencies and become acquainted with their work and the men who conduct this work. Such contacts have already proved valuable to many University of Maryland graduates.

Also, it is not uncommon for men from these agencies to speak before classes at the University and to be guest speakers at student club meetings and otherwise take part in student activities. No other college of agriculture in the United States is physically located to offer like opportunities to its students.

Coordination of Agricultural Work

The strength of the College of Agriculture of the University of Maryland lies in the close coordination of the instructional, research, extension, and regulatory functions within the individual departments, between the several departments, and in the institution as a whole. Instructors in the several departments are closely associated with the research, extension and regulatory work being carried on in their respective fields, and in many cases, devote a portion of their time to one or more of these types of activities. Close coordination of these four types of work enables the University to provide a stronger faculty in the College of Agriculture, and affords a higher degree of specialization than would otherwise be possible. It insures instructors an opportunity to keep informed on the latest results of research, and to be constantly in touch with current trends and problems which are revealed in extension and regulatory activities. Heads of departments hold staff conferences to this end, so that the student at all times is as close to the developments in the frontiers of the several fields of knowledge as it is possible for organization to put him.

In order that the work of the College shall be responsive to agricultural interests and shall adequately meet the needs of the several agricultural industries in the State, and that the courses of instruction shall at all times be made most helpful for students who pursue them, Advisory Councils have been constituted in the major industries of agriculture. These Councils are composed of leaders in the respective lines of agriculture in Maryland, and the instructional staff of the College of Agriculture has the benefit of their counsel and advice. By this means the College, the industries, and the students are kept abreast of developments.

Facilities and Equipment

In addition to buildings, laboratories, libraries, and equipment for effective instruction in the related basic sciences and in the cultural subjects, the University of Maryland is provided with excellent facilities for research and instruction in agriculture. University farms, totaling more than 1,500 acres, are operated for instructional and investigational purposes. One of the most complete and modern plants for dairy and animal husbandry work in the country, together with herds of the principal breeds of dairy and beef cattle, and other livestock, provides facilities and materials for instruction and research in these industries. Excellent laboratory and field facilities are available in the Agronomy Department for breeding and selection in farm crops, and for soils research. The Poultry Department has a building for laboratories and classrooms, a plant comprising thirty-four acres,

and flocks of all the important breeds of poultry. The Horticulture Department is housed in a separate building, and has ample orchards and gardens for its various lines of work.

Departments and Curricula

Departments in the College of Agriculture and their curricula are as follows: Agricultural Economics and Marketing; Agricultural Education and Rural Life; Agricultural Engineering; Agronomy (including crops and soils); Animal Husbandry; Botany (including plant morphology and taxonomy, plant pathology, and plant physiology and ecology); Dairy (including dairy husbandry and dairy products technology); Entomology (including bee culture); Horticulture (including pomology, olericulture, floriculture, ornamental horticulture and commercial processing); Poultry Husbandry; Veterinary Science. In addition, there are curricula in Agricultural Chemistry and General Agriculture. Courses of study may also be arranged for any who desire to return to the farm after one or more years of training in practical agricultural subjects.

Admission

All students desiring to enroll in the College of Agriculture must apply to the Director of Admissions of the University of Maryland at College Park. In selecting students more emphasis is placed upon good marks and other indications of probable success in college rather than upon a fixed pattern of subject matter. Subjects required for admission are: 4 units of English; 1 unit each in a social science, a biological science and a natural science; plane geometry and algebra are necessary for certain curricula and desirable for all.

Information concerning procedure for admission is found in the General Information Bulletin.

Junior Standing

To attain junior standing in the College of Agriculture, a student must have an average grade of C in not less than 70 semester hours.

Requirements for Graduation

Each student must acquire a minimum of 124 semester hour credits in academic subjects other than basic military science and physical activities. Men must acquire in addition 12 hours in basic military science and 4 hours in physical activities. Women must acquire in addition 4 hours in hygiene, and 4 hours in physical activities.

Scholarships for Agricultural Students

Ten scholarships of \$165 each are granted by the Sears Roebuck Foundation to the sons of farmers in the State of Maryland who enroll in the Freshman class of the College of Agriculture of this University. One \$200 scholarship is granted each year to the sophomore student in the College of Agriculture who proved to be the outstanding student on a

Sears Roebuck Scholarship the previous year. These scholarships are awarded by the Faculty Committee in accordance with the terms of the grant.

A Borden Agricultural Scholarship of \$300 is granted to that student in the College of Agriculture who has had two or more of the regularly listed courses in dairying and who, upon entering the senior year of study, has achieved the highest average grade among all eligible students in all preceding college work.

The Danforth Foundation and the Ralston Purina Company of St. Louis offers two summer scholarships to outstanding students in the College of Agriculture, one for a student who has successfully completed his Freshman year; the other for a student who has successfully completed his Junior year. The purpose of these scholarships is to bring together outstanding young men for leadership training.

Farm and Laboratory Practice

The head of each department will help to make available opportunities for practical or technical experience along his major line of study for each student whose major is in that department and who is in need of such experience. For inexperienced students in many departments this need may be met by one or more summers spent on a farm.

Student Organizations

Students find opportunity for varied expression and growth in the several voluntary organizations sponsored by the College of Agriculture. These organizations are: Agricultural Economics Club, Block and Bridle Club, Collegiate 4-H Club, Future Farmers of America, Plant Industry Club, Riding Club, Student Grange, Alpha Zeta, and the Agricultural Student Council.

Membership in these organizations is voluntary and no college credits are given; yet much of the training obtained is fully as valuable as that acquired from regularly prescribed courses. All of these organizations have regular meetings, arrange special programs and contribute to the extra-curricular life of the students.

The Agricultural Economics Club is a forum for students and faculty in the field of Agricultural Economics. The Block and Bridle Club is composed of students interested in livestock; it conducts a Student Livestock Judging Contest in the fall and a Student Fitting and Showing Contest in the spring on the campus. The Collegiate 4-H Club is composed of former members and others interested in Agricultural Extension work.

The Future Farmers of America foster an interest in Vocational Agriculture and the Collegiate Chapter serves as host to high school chapters in the State at their judging contests held at the University. Students interested in Agronomy, Botany and Horticulture are brought together in meetings of the Plant Industry Club to consider important phases of plant science and industry as well as for social activity.

Students who enjoy horseback riding are brought together in the Riding Club; this organization sponsors an annual Horse Show in cooperation with other riding enthusiasts in the vicinity of the University. The Student Grange represents the great national farmers' fraternity of the order of Patrons of Husbandry and emphasizes training for rural leadership.

Membership in Alpha Zeta, national agricultural honor fraternity, is chosen from students in the College of Agriculture who have met certain scholastic requirements and displayed leadership in agriculture.

The Agricultural Student Council is made up of representatives from the various student organizations in the College of Agriculture. Its purpose is to coordinate activities of these organizations and to promote work which is beneficial to the College.

Student Judging Teams

The College of Agriculture sponsors teams to judge dairy cattle, dairy products, horticultural products, livestock and poultry. Team members are selected from students taking courses designed especially to train them for this purpose. The College of Agriculture enters teams at major shows where the students compete with teams from other state universities or agricultural colleges.

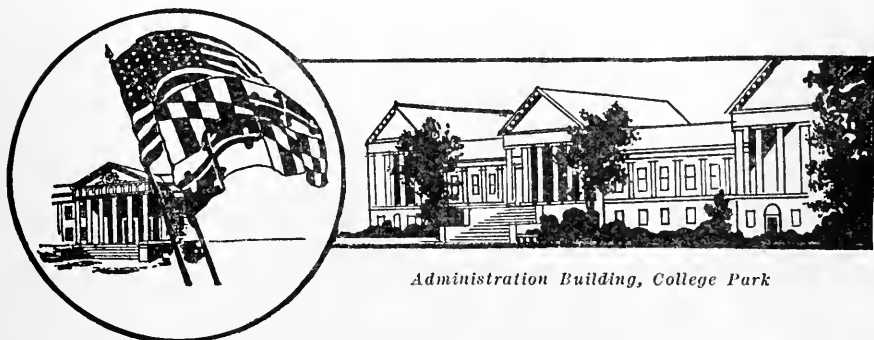
Student Advisers

Each student in the College of Agriculture is assigned to a faculty adviser, either departmental or general. Departmental advisers consist of heads of departments or persons selected by them to advise students with curricula in their respective departments. General advisers are selected for students who have no definite choice of curriculum in mind, or who wish to pursue the general curriculum in agriculture.

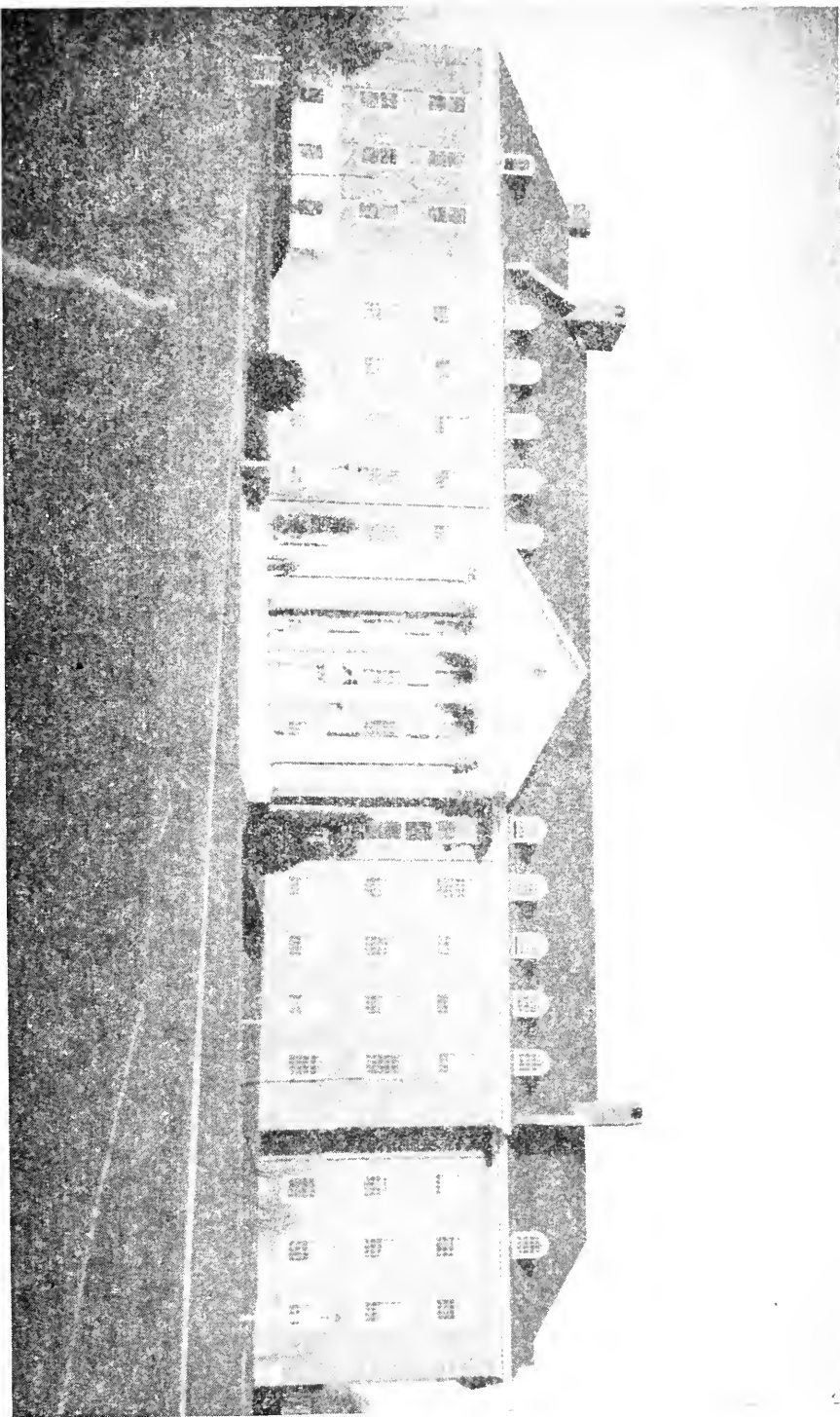
Electives

The electives in the suggested curricula which follow afford opportunity for those who so desire to supplement major and minor fields of study or to add to their general training.

With the advice and consent of those in charge of his registration, a student may make such modifications in his curriculum as are deemed advisable to meet the requirements of his particular need.



Administration Building, College Park



The Agriculture Building

CURRICULA IN AGRICULTURE

Freshman Year

The program of the freshman year in the College of Agriculture is the same for all curricula of the College. Its purpose is to afford the student an opportunity to lay a broad foundation in subjects basic to agriculture and the related sciences, to articulate beginning work in college with that pursued in high or preparatory schools, to provide opportunity for wise choice of programs in succeeding years, and to make it possible for a student before the end of the year to change from one curriculum to another, or from the College of Agriculture to the curriculum in some other college of the University with little or no loss of credit.

Students entering the freshman year with a definite choice of curriculum in mind are sent to departmental advisers for counsel as to the wisest selection of freshman electives from the standpoint of their special interests and their probable future programs. Students entering the freshman year with no definite curriculum in mind, are assigned to a general adviser, who assists with the choice of freshman electives and during the course of the year acquaints the students with the opportunities in the upper curricula in the College of Agriculture and in the other divisions of the University. If by the close of the freshman year a student makes no definite choice of a specialized curriculum, he continues under the guidance of his general adviser in the General Agriculture Curriculum.

Agriculture Curriculum

Freshman Year

	—Semester—	
	I	II
Eng. 1, 2—Composition and Readings in American Literature.....	8	8
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
M. S. 1, 2—Elementary R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Hea. 2, 4—Hygiene (Women).....	2	2
R. Ed. 1—Introduction to Agriculture.....	1	....
**Math. 0—Basic Mathematics .....	....	0
*Elect either of the following pairs of courses:		
Bot. 1, General Botany and Zool. 1, General Zoology.....	4	4
Chem. 1, 3, General Chemistry.....	4	4
Elect one of the following each semester:		
Modern Language	3	8
†Math. 5, 6 or 10, 11, or 10, 13.....	3	8
Physics 1, 2—Elements of Physics.....	3	8
A. H. 1—Fundamentals of Animal Husbandry.....	3	....
Agron. 1—Crop Production .....	....	3

** An examination in Mathematics will be given at an announced date during the first semester; students passing this test will not be required to take Math. 0.

* Both pairs of courses are required for graduation from the College of Agriculture.

† Students who expect to pursue the curriculum in Agricultural Chemistry or Agricultural Engineering must be prepared to elect Math. 14, 15 and 17.

Agriculture—General

This curriculum is designed for persons wishing to return to the farm, enter work allied to farming, for those seeking a general rather than a specialized knowledge of the field of agriculture and for those preparing to work in any general field in agriculture.

By proper use of the electives allowed in this curriculum, a student may choose a field of concentration in agriculture and at the same time elect courses that contribute to a liberal education.

General Agriculture Curriculum‡

	—Semester—	
	<i>I</i>	<i>II</i>
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 1, 3—General Chemistry.....	4	4
P. H. 1—Poultry Production.....	3	....
Dairy 1—Fundamentals of Dairying.....	....	3
Speech 1, 2—Public Speaking.....	2	2
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	19	19
<i>Junior Year</i>		
Zool. 104—Genetics	3	....
Hort. 5—Fruit Production, or Hort. 58—Vegetable Production.....	....	3
Ent. 1—Introductory Entomology .....	....	3
Soils 1—General Soils	3	....
Agr. Engr. 101—Farm Machinery.....	3	....
Agr. Engr. 102—Gas Engines, Tractors and Automobiles.....	....	3
A. E. 100—Farm Economics	3	....
Econ. 37—Fundamentals of Economics.....	....	3
Biological or Physical Science Sequence.....	3	3
Electives	3	3
Total	18	18
<i>Senior Year</i>		
A. E. 107—Analysis of the Farm Business.....	8	....
A. E. 108—Farm Management .....	....	3
Agron. 151—Cropping Systems .....	....	2
R. Ed. 114—Rural Life and Education.....	....	3
Electives	12	9
Total	15	17

‡ If A. H. 1 and Agron. 1 are not elected in the Freshman year they must be elected in subsequent years.

AGRICULTURAL CHEMISTRY

This curriculum insures adequate instruction in the fundamentals of both the physical and biological sciences. It may be adjusted through the selection of electives to fit the student for work in agricultural experiment stations, soil bureaus, geological surveys, food laboratories, fertilizer industries and those handling food products.

Agricultural Chemistry Curriculum

	Semester	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
Chem. 15, 17—Qualitative Analysis.....	3	3
Math. 20, 21—Calculus	4	4
Bot. 1—General Botany	4	....
Zool. 1—General Zoology .....	....	4
Speech 18, 19—Introductory Speech.....	1	1
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities.....	1	1
Total	19	19
<i>Junior Year</i>		
Chem. 35, 37—Elementary Organic Lecture.....	2	2
Chem. 36, 38—Elementary Organic Laboratory.....	2	2
Chem. 21, 22—Quantitative Analysis.....	4	4
Modern Language	3	3
Geol. 1—Geology	3	....
Soils 1—General Soils .....	...	3
Electives in Biology	3	3
Total	17	17
<i>Senior Year</i>		
H. 5, 6—History of American Civilization.....	3	3
Modern Language	3	3
Phys. 20, 21—General Physics	5	5
Electives in Agricultural Chemistry.....	6	6
Total	17	17

AGRICULTURAL ECONOMICS AND MARKETING

The curriculum in agricultural economics and marketing is designed to prepare students for the following types of positions: On the farm as farm operators and farm managers; with farm organizations, such as the Farm Bureau and farmers' cooperatives; with private and corporate business concerns; and positions with state and federal agencies, such as college teachers, agricultural extension workers, and research with federal and state agencies.

The courses in this department are designed to provide fundamental training in the basic economic principles underlying farming. The curriculum includes courses in farm management, general agricultural economics,

marketing, finance, prices, taxation, and land economics to give the student the foundation needed to meet the production and distribution problems confronting the individual farmer in a progressive rural community.

Farming is a business, as well as a way of life, and as such demands for its successful conduct the use of business methods; the keeping of farm business records, analyzing the farm business, and of organizing and operating the farm as a business enterprise. It requires knowledge of farm resources and taxation, methods of financing agricultural production and marketing, including agencies involved, services rendered and the cost of getting products from the producer to the consumer through cooperative and private types of organization.

Agricultural Economics and Marketing Curriculum*

	—Semester—	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 1, 3—General Chemistry.....	4	4
Math. 5—General Mathematics.....	3	....
Econ. 37—Fundamentals of Economics.....	....	3
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities.....	1	1
Total	17	17
<i>Junior Year</i>		
A. E. 100—Farm Economics.....	3	....
A. E. 101—Marketing of Farm Products.....	....	3
A. E. 107—Analysis of the Farm Business.....	3	....
A. E. 104—Farm Finance.....	....	3
B. A. 130—Statistics.....	....	3
Speech 1, 2—Public Speaking.....	2	2
P. H. 1—Poultry Production.....	3	....
Soils 1—General Soils.....	3	....
Electives.....	4	7
Total	18	18
<i>Senior Year</i>		
A. E. 103—Cooperation in Agriculture.....	3	....
A. E. 106—Prices of Farm Products.....	....	3
Agr. Engr. 101—Farm Machinery.....	3	....
A. E. 108—Farm Management.....	....	3
Soc. 113—The Rural Community.....	....	3
A. H. 110—Feeds and Feeding.....	3	....
A. E. 111—Land Economics.....	3	....
A. E. 110—Seminar.....	1	1
Electives.....	5	8
Total	18	18

* If A. H. 1 and Agron. 1 are not elected in the Freshman Year, they must be elected in subsequent years.

AGRICULTURAL EDUCATION AND RURAL LIFE

The primary objective of this curriculum is to prepare for teaching secondary vocational agriculture, work as county agents and allied lines of the rural education services. Graduates from this curriculum are in demand in rural businesses, particularly of the cooperative type. A number have entered the Federal service. Others are engaged in teaching and research in agricultural colleges. Quite a few have returned to the farm as owner-managers.

In addition to the regular entrance requirements of the University, involving graduation from a standard four-year high school, students electing the agricultural education curriculum must present evidence of having acquired adequate farm experience after reaching the age of fourteen years.

Students with high average may upon petition be relieved of certain requirements in this curriculum, when evidence is presented that either through experience or previous training a prescribed course is non-essential. Or they may be allowed to carry an additional load.

All students following this curriculum are required to attend meetings of the Collegiate Chapter of the Future Farmers of America during their junior and senior years in order to gain needed training to serve as advisers of high school chapters of FFA upon graduation. All Agricultural Education majors are urged to become members of the FFA and to participate in the activities of the organization.

Agricultural Education Curriculum*

	—Semester—	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 1, 3—General Chemistry.....	4	4
P. H. 1—Poultry Production.....	3	....
Dairy 1—Fundamentals of Dairy Husbandry.....	....	3
Speech 1, 2—Public Speaking.....	2	2
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities.....	1	1
Total	19	19
<i>Junior Year</i>		
Phys. 1, 2—Elements of Physics.....	3	3
Bot. 20—Diseases of Plants.....	3	....
Ent. 1—Introductory Entomology .....	....	3
A. H. 110—Feeds and Feeding.....	3	....
Soils 1—General Soils	3	....
Hort. 58—Vegetable Production .....	....	3
A. Engr. 101—Farm Machinery	3	....
R. Ed. 107—Observation and Analysis of Teaching.....	....	3
A. E. 108—Farm Management .....	....	3
Econ. 37—Fundamentals of Economics.....	3	....
Psych. 110—Educational Psychology .....	....	3
Total	18	18

* If A. H. 1 and Agron. 1 are not elected in the Freshman Year, they must be elected in subsequent years.

<i>Senior Year</i>	—Semester—	
	<i>I</i>	<i>II</i>
A. Engr. 102—Gas Engines, Tractors and Automobiles.....	....	3
R. Ed. 109—Teaching Secondary Vocational Agriculture.....	3	....
R. Ed. 111—Teaching Young and Adult Farmer Groups.....	1	....
R. Ed. 103—Practice Teaching.....	5	....
R. Ed. 101—Teaching Farm Practicums and Demonstrations.....	2	....
A. Engr. 104—Farm Mechanics	2	....
Agron. 151—Cropping Systems .....	....	2
Dairy 101—Dairy Production .....	....	3
R. Ed. 112—Departmental Management .....	....	1
R. Ed. 114—Rural Life and Education.....	....	3
Ed. 152—The Adolescent: Characteristics and Problems.....	....	2
Agricultural Electives	3	2
Total	16	16

AGRICULTURAL ENGINEERING

The department offers to students of agriculture training in those agricultural subjects which are based upon engineering principles. These subjects may be grouped under three heads: farm machinery and farm power, farm buildings, and farm drainage.

Five-Year Program in Agriculture—Engineering

For those students who wish to specialize in the application of engineering principles to the physical and biological problems of agriculture there is offered a combined program, extending over a five-year period, arranged jointly by the College of Agriculture and the College of Engineering, and leading to a degree from each of these colleges.

This program prepares graduates to enter state, federal or commercial fields of activity in such work as soil and water conservation, rural electrification, design and sale of farm machinery and structures, and in the development of new uses for farm products and the profitable utilization of farm wastes and by-products.

To be properly trained in these fields a student needs a broader knowledge of basic and applied engineering principles than could be provided in a four-year course in agriculture. He also needs a broader training in the fundamentals of agriculture than a standard four-year course in engineering could furnish.

Upon completion of the normal four year course of study the degree of Bachelor of Science in Agriculture is granted. For the fifth year the student registers in the College of Engineering, and at the end of that year, upon satisfactory completion of the required course of study, receives a degree in civil, electrical, mechanical or chemical engineering.

Curriculum in Agriculture-Engineering

	Semester	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
Speech 7—Public Speaking .....	.....	2
*Math. 14—Plane Trigonometry	2	....
*Math. 15—College Algebra	3	....
Math. 17—Analytic Geometry .....	....	4
Chem. 1, 3—General Chemistry.....	4	4
Dr. 1, 2—Engineering Drawing.....	2	2
Engr. 1—Introduction to Engineering.....	1	....
R. Ed. 1—Introduction to Agriculture.....	1	....
M. S. 1, 2—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	20	19

For the students whose final objective is a degree in Civil Engineering, the balance of the curriculum is:

Sophomore Year (Civil Engineering Option)

G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
Math. 20, 21—Calculus	4	4
Phys. 20, 21—General Physics.....	5	5
Dr. 3—Advanced Engineering Drawing.....	2	....
Mech. 1—Statics and Dynamics.....	....	3
Surv. 1, 2—Plane Surveying.....	2	2
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities.....	1	1
Total	20	21

Junior Year (Civil Engineering Option)

Eng. 3, 4—Composition and World Literature; or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
Speech 108—Public Speaking.....	....	2
Math. 16—Spherical Trigonometry	2	....
Geol. 2—Engineering Geology .....	....	2
Mech. 50—Strength of Materials.....	4	....
Mech. 53—Materials of Engineering.....	....	2
Bot. 1—General Botany	4	....
Zool. 1—General Zoology .....	....	4
Agr. Engr. 101—Farm Machinery.....	3	....
Agr. Engr. 107—Farm Drainage.....	....	2
Agr. Engr. 106—Farm Mechanics.....	....	2
Agron. 1—Farm Crops	3	....
Elective in Agriculture.....	....	3
Total	19	20

* A qualifying test is given during registration to determine whether the student is adequately prepared for Math. 14 and 15. A student failing this test is required to take Math. 1, Introductory Algebra, without credit, and is not eligible to take Math. 14 concurrently.

<i>Fourth Year (Civil Engineering Option)</i>	—Semester—	
	I	II
C. E. 50—Hydraulics	3	....
C. E. 51—Curves and Earthwork.....	....	3
C. E. 100—Theory of Structures.....	....	4
Surv. 100—Advanced Surveying	4	....
M. E. 50—Principles of Mechanical Engineering.....	3	....
E. E. 50—Principles of Electrical Engineering.....	....	3
Agr. Engr. 102—Gas Engines, Tractors and Automobiles.....	....	3
Agr. Engr. 105—Farm Buildings.....	2	....
A. E. 108—Farm Management.....	....	3
Electives in Agriculture	8	4
Total	<hr/> 20	<hr/> 20

Fifth Year (Civil Engineering Option)

H. 5, 6—History of American Civilization.....	3	3
Econ. 37—Fundamentals of Economics.....	3	....
Engr. 100—Engineering Contracts and Specifications.....	....	2
Eng. 7—Technical Writing .....	....	2
Bact. 55—Sanitary Bacteriology for Engineers.....	2	....
C. E. 101—Soil Mechanics.....	3	....
C. E. 102—Structural Design.....	6	....
C. E. 103—Concrete Design.....	....	6
C. E. 104—Water Supply.....	3	....
C. E. 105—Sewerage .....	....	3
C. E. 106—Elements of Highways.....	....	3
Total	<hr/> 20	<hr/> 19

For the student whose final objective is a degree in Mechanical Engineering, the balance of the curriculum is:

Sophomore Year (Mechanical Engineering Option)

G. & P. 1—American Government	3	....
Soc. 1—Sociology of American Life.....	....	3
Math. 20, 21—Calculus	4	4
Phys. 20, 21—General Physics.....	5	5
Surv. 1—Plane Surveying .....	....	2
Dr. 3—Advanced Engineering Drawing.....	2	....
Shop 1—Machine Shop Practice.....	2	....
Shop 2—Machine Shop Practice.....	....	1
Shop 3—Foundry Practice .....	....	1
M. S. 3, 4—Elementary R. O. T. C.....	3	3
Physical Activities	1	1
Total	<hr/> 20	<hr/> 20

	—Semester—	
	I	II
<i>Junior Year (Mechanical Engineering Option)</i>		
Eng. 3, 4—Composition and World Literature; or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
Math. 64—Differential Equations for Engineers.....	3	....
Mech. 2—Statics and Dynamics.....	5	....
Mech. 52—Strength of Materials.....	....	5
Bot. 1—General Botany	4	....
Zool. 1—General Zoology .....	....	4
Agr. Engr. 101—Farm Machinery	3	....
Agr. Engr. 107—Farm Drainage .....	....	2
Agr. Engr. 106—Farm Mechanics .....	....	2
Agron. 1—Crop Production .....	....	3
Total	18	19

Fourth Year (Mechanical Engineering Option)

E. E. 51, 52—Principles of Electrical Engineering.....	4	4
M. E. 53—Metallography .....	....	3
M. E. 54—Fluid Mechanics .....	....	3
M. E. 100—Thermodynamics	3	....
Agr. Engr. 102—Gas Engines, Tractors and Automobiles.....	....	3
Agr. Engr. 105—Farm Buildings	2	....
A. E. 108—Farm Management .....	....	3
Electives in Agriculture.....	11	4
Total	20	20

Fifth Year (Mechanical Engineering Option)

Engr. 100—Engineering Contracts and Specifications.....	....	2
H. 5, 6—History of American Civilization.....	3	3
M. E. 101—Heat Transfer	2	....
M. E. 102—Heating and Ventilation.....	3	....
M. E. 103—Refrigeration .....	....	3
M. E. 104, 105—Prime Movers	4	4
M. E. 106, 107—Mechanical Engineering Design.....	4	4
M. E. 108, 109—Mechanical Laboratory	2	2
Total	18	18

For the student whose final objective is a degree in Electrical or Chemical Engineering, curricula corresponding to the foregoing will be arranged.

AGRONOMY

The curricula in this department are separated into two major divisions; namely Crops and Soils. The Crops division includes Crop Production and Crop Breeding. The Crop Production curriculum is designed to prepare students for general farming, specialized crop farming, the production of improved seeds, employment with commercial firms, state and federal experiment stations, or county agent work. The curriculum for Plant Breeding is designed to prepare students to work with commercial seed companies or federal and state experiment stations. The curriculum in Soils is designed both to equip future farmers with adequate knowledge of soils and to prepare students for teaching, research, and special soils work. Although the Soils curriculum is placed in the Department of Agronomy, its courses are designed for all students who have soil interests regardless of the line of their major specialization.

Crop Production Curriculum*

	Semester	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 1, 3—General Chemistry.....	4	4
Ent. 1—Introductory Entomology.....	3	....
Econ. 37—Fundamentals of Economics.....	....	3
Speech 1, 2—Public Speaking.....	2	2
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	19	19
<i>Junior Year</i>		
Agron. 30—Cereal Crop Production.....	3	....
Agron. 31—Forage Crop Production.....	....	3
Agron. 153—Selected Crop Studies.....	....	2
Zool. 104—Genetics	3	....
Soils 1—General Soils	8	....
Bact. 1—General Bacteriology .....	....	4
Bot. 101—Plant Physiology	4	....
Bot. 20—Diseases of Plants.....	3	....
Math. 5—General Mathematics.....	....	3
Electives	1	5
Total	17	17
<i>Senior Year</i>		
Agron. 103—Crop Breeding	2	....
Agron. 151—Cropping Systems .....	....	2
Agron. 152—Seed Production and Distribution.....	....	2
A. E. 108—Farm Management.....	....	3
Agr. Engr. 101—Farm Machinery.....	3	....
Agr. Engr. 107—Farm Drainage.....	....	2
Soils 112—Soil Conservation.....	3	....
A. H. 110—Feeds and Feeding.....	3	....
Electives	5	7
Total	16	16

* If A. H. 1 and Agron. 1 are not elected in the Freshman Year they must be elected in subsequent years.

Crop Breeding Curriculum

Students following the Crop Breeding Curriculum will have the same requirements as the Crop Production Curriculum, except that Math. 10 and Math. 13, Algebra, (3), Elements of Mathematical Statistics, (3), will be required in the first semester of the Junior Year.

Soils Curriculum*

	—Semester—	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Bot. 1—General Botany.....	4	....
Bact. 1—General Bacteriology.....	....	4
Soils 1—General Soils.....	3	....
Soils 2—Principles of Soil Fertility.....	....	3
Speech 1, 2—Public Speaking.....	2	2
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	19	19
<i>Junior Year</i>		
Soils 51—Soil Investigation Methods.....	2	....
Soils 103—Soil Geography .....	....	3
Bot. 101—Plant Physiology	4	..
Agr. Engr. 107—Farm Drainage.....	....	2
Geol. 1—Geology	3	....
Chem. 19—Quantitative Analysis .....	....	4
Chem. 31, 33 or 35, 37—Elements of Organic Chemistry.....	2	2
Chem. 32, 34—Elements of Organic Chemistry.....	1	1
Electives	6	6
Total	18	18
<i>Senior Year</i>		
Soils 112—Soil Conservation	3	....
Soils 120—Soil Management .....	....	3
Agron. 151—Cropping Systems.....	....	2
Zool. 104—Genetics	3	....
A. E. 108—Farm Management.....	....	3
Electives	10	8
Total	16	16

ANIMAL HUSBANDRY

The curriculum in Animal Husbandry is organized for the purpose of preparing students for various phases of work in the field of animal industry as: operators and managers of livestock farms, as investigators and research workers in Federal, State and private institutions, and as workers in specialized fields where a knowledge of the livestock industry is necessary.

By proper use of electives, the student may equip himself to become a county agricultural agent; to meet the requirements of positions with certain types of private and cooperative business concerns; or, with more technical and specialized training, to become qualified for instructional

* If A. H. 1 and Agron. 1 are not elected in the Freshman Year they must be elected in subsequent years.

work in colleges, for investigational work in State and Federal experiment stations or in commercial research laboratories. Students who desire to enter the field of teaching or highly specialized research should elect the more scientific courses offered by this and by other departments.

Animal Husbandry Curriculum*

	—Semester—	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
Chem. 31, 33—Elements of Organic Chemistry.....	2	2
Chem. 32, 34—Elements of Organic Laboratory.....	1	1
Bot. 1—General Botany	4	....
Zool. 1—General Zoology .....	....	4
Dairy 1—Fundamentals of Dairying.....	....	3
Econ. 37—Fundamentals of Economics.....	3	....
Speech 1, 2—Public Speaking.....	2	2
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	19	19
<i>Junior Year</i>		
H. 5, 6—History of American Civilization.....	3	3
Bact. 1—General Bacteriology .....	....	4
A. H. 31—Livestock Judging.....	....	2
A. H. 110—Feeds and Feeding.....	3	....
A. H. 120—Principles of Breeding.....	....	3
*A. H. 131—Sheep Production .....	....	3
**A. H. 133—Horse Production	3	....
A. E. 108—Farm Management.....	....	3
Zool. 104—Genetics	3	....
Soils 1—General Soils	3	....
Electives	3	....
Total	18	18
<i>Senior Year</i>		
A. H. 111—Animal Nutrition.....	3	....
*A. H. 130—Beef Cattle Production.....	3	....
**A. H. 132—Swine Production .....	....	3
A. H. 150—Livestock Markets and Marketing.....	2	....
A. H. 160—Meat and Meat Products.....	....	3
V. S. 101—Comparative Anatomy and Physiology.....	3	....
V. S. 102—Animal Hygiene.....	....	3
Agr. Engr. 101—Farm Machinery.....	3	....
Electives	3	8
Total	17	17

BOTANY

The department offers three major fields of work: plant morphology and taxonomy; plant pathology; or plant physiology and ecology. The required courses for the freshman and sophomore years are the same for all students. In the junior and senior years, the student elects botany courses

* If A. H. 1 and Agron. 1 are not elected in the Freshman Year they must be elected in subsequent years.

** Only two production courses are required for graduation. The student may choose any two of these three courses to fulfill this requirement.

to suit his particular interest. Courses are required in other subjects to contribute toward a broad cultural education, and to support the courses selected in the chosen field of botany.

Through cooperation with the College of Education, students who wish to meet the requirements for the state high school teacher's certificates, may elect the necessary work in education.

The curriculum as outlined, provides a complete survey of the field of botany for prospective high school teachers, and lays a good foundation for graduate work in botany in preparation for college teaching and for research in state or federal experiment stations, or in private research laboratories.

Students are also afforded an opportunity for training for other vocations involving various botanical applications, such as extension work, and positions with seed companies, canning companies and other commercial concerns.

Botany Curriculum

	—Semester—	
	I	II
<i>Sophomore Year</i>		
Eng. 5, 6 or Eng. 3, 4.....	3	3
Modern Language	3	3
Bot. 20—Diseases of Plants.....	3	....
Bot. 2—General Botany .....	....	4
Chem. 1, 3—General Chemistry.....	4	4
Speech 1, 2—Public Speaking.....	2	2
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	19	20
<i>Junior Year</i>		
H. 5, 6—History of American Civilization.....	3	3
Modern Language	3	3
Phys. 10, 11—Fundamentals of Physics.....	4	4
Bot. 101—Plant Physiology	4	....
Bot. 11—Plant Taxonomy .....	....	3
Bot. 110—Plant Microtechnique .....	....	2
Bact. 1—Bacteriology	4	....
Electives .....	....	2
Total	18	17
<i>Senior Year</i>		
Bot. 112—Seminar	1	1
Bot. 111—Plant Anatomy.....	3	....
Bot. 102—Plant Ecology .....	....	3
Bot. 115—Structure of Economic Plants.....	....	2
Bot. 116—History and Philosophy of Botany.....	1	....
Zool. 104—Genetics	3	....
Botany Electives	3-3	3-5
Electives	5-0	7-5
Total	16	16

Students specializing in Plant Morphology or Plant Taxonomy will elect Bot. 114 and Bot. 128; those specializing in Plant Pathology will elect Bot. 122, Ent. 1, and two of the following: Bot. 123, Bot. 124, Bot. 125, Bot. 126; those specializing in Plant Physiology will elect Organic Chemistry, Chem. 31, 32, 33, 34.

DAIRY

The department offers instruction in two major lines of work: dairy husbandry and dairy products technology. In the dairy husbandry curriculum, students are given technical and practical training in the breeding, feeding, management, and selection of dairy cattle and in milk production. With suitable choice of courses, students are qualified as operators of dairy farms, for breed promotion and sales work, for employment with private and cooperative business organizations, and for county agent work. The dairy products technology curriculum is designed to prepare students for practical and scientific work concerned with the processing and distribution of milk, manufacture and handling of butter, cheese, ice cream, and other products, in dairy plant operation and management, and in dairy inspection. Students satisfactorily majoring in dairy products technology are qualified for the many technical and applied positions in the various branches of the dairy industry.

By careful election of courses in either curriculum the student may lay a foundation for advanced study, for instructional work in colleges, and for research in experiment stations or commercial laboratories. The suggested curricula will be modified to meet the special needs of individual students.

Dairy Husbandry Curriculum*

	Semester	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 1, 3—General Chemistry.....	4	4
Bact. 1—General Bacteriology.....	4	....
Agron. 1—Crop Production.....	....	3
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	18	17
<i>Junior Year</i>		
Chem. 31, 33—Elements of Organic Chemistry.....	2	2
Chem. 32, 34—Elements of Organic Chemistry Laboratory.....	1	1
Econ. 37—Fundamentals of Economics.....	....	3
Speech 1, 2—Public Speaking.....	2	2
Bact. 133—Dairy Bacteriology.....	4	....
Zool. 104—Genetics	3	....
Soils 1—General Soils	3	....
A. H. 110—Feeds and Feeding.....	3	....
A. H. 120—Principles of Breeding.....	....	3
Dairy 30—Dairy Cattle Judging.....	....	2
Dairy 109—Market Milk .....	....	4
Electives .....	....	2
Total	18	19

* Students planning to pursue this curriculum should elect Dairy 1 the second semester of the freshman year. If A. H. 1 is not elected in the freshman year it must be taken in subsequent years.

—Semester—

Senior Year

	I	II
Agr. Engr. 101—Farm Machinery.....	3	....
A. E. 108—Farm Management.....	....	3
V. S. 101—Comparative Anatomy and Physiology.....	3	....
V. S. 102—Animal Hygiene.....	....	3
A. H. 111—Animal Nutrition.....	3	....
Dairy 100—Dairy Cattle Management.....	1	....
Dairy 101—Dairy Production .....	....	3
Dairy 105—Dairy Breeds and Breeding.....	2	....
Dairy 120, 121—Dairy Seminar	1	1
Electives	4	7
Total	17	17

*Dairy Products Technology Curriculum†**Sophomore Year*

	I	II
Eng. 3, 4 or 5, 6.....	3	3
H. 5, 6—History of American Civilization	3	3
Chem. 1, 3—General Chemistry.....	4	4
Zool. 1—General Zoology	4	....
Bact. 1—General Bacteriology .....	....	4
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	18	18

Junior Year

Chem. 31, 33—Elements of Organic Chemistry.....	2	2
Chem. 32, 35—Elements of Organic Chemistry Laboratory.....	1	1
Chem. 19—Quantitative Analysis .....	....	4
Econ. 37—Fundamentals of Economics.....	3	....
Bact. 133—Dairy Bacteriology.....	4	....
Speech 1, 2—Public Speaking.....	2	2
Dairy 40—Grading Dairy Products .....	....	1
Dairy 108—Dairy Technology	4	....
Dairy 110—Butter and Cheese Making.....	....	4
Dairy 109—Market Milk .....	....	4
Total	16	18

Senior Year

Dairy 111—Concentrated Milk Products .....	....	2
Dairy 112—Ice Cream	4	....
Dairy 114—Special Laboratory Methods.....	....	4
Dairy 115—Dairy Plant Inspection.....	2	....
Dairy 116—Dairy Plant Management.....	....	4
Dairy 120, 121—Dairy Seminar	1	1
Electives	11	6
Total	18	17

† Students planning to pursue this curriculum should elect Dairy 1 in the freshman year. Those interested in the business rather than the technical phases of dairy technology may substitute approved courses in business and economics for Chem. 19, 31, 32, 33, 35.

ENTOMOLOGY

This curriculum, which trains students for work in various types of private, commercial, state and federal entomological positions, includes basic courses in Entomology and related fields. Most of the first two years is devoted to obtaining this essential background. In the junior and senior years the student, besides the required courses, has 18 credit hours of electives. Non-required courses in Entomology and related subjects are available to broaden the scope of the training.

A student wishing an undergraduate minor in Entomology should take the introductory course (Ent. 1) and after consultation with the heads of both the major and minor departments select courses that will contribute most to the end he has in view.

Entomology Curriculum*

	—Semester—	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 1, 3—General Chemistry.....	4	4
Ent. 2—Insect Morphology.....	3	...
Ent. 3—Insect Taxonomy.....	...	3
Speech 1, 2—Public Speaking.....	2	2
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	19	19
<i>Junior Year</i>		
Chem. 31, 33—Elements of Organic Chemistry.....	2	2
Chem. 32, 34—Elements of Organic Chemistry Lab.....	1	1
Bot. 1—General Botany.....	4	...
Bact. 1—General Bacteriology.....	...	4
Ent. 103, 104—Insect Pests	3	3
Phy. 1, 2—Elements of Physics.....	3	3
Foreign Language	3	3
Electives	2	2
Total	18	18
<i>Senior Year</i>		
Bot. 20—Diseases of Plants.....	3	...
Ent. 105—Medical Entomology.....	3	...
Ent. 101—Economic Entomology .....	...	3
†Ent. 110, 111—Special Problems	1	1
Ent. 112—Seminar	1	1
Foreign Language	3	3
Electives	6	8
Total	17	16

* Students planning to pursue this curriculum should elect Ent. 1 the second semester of the Freshman year.

† Students may satisfy this requirement in one semester, if their schedule permits, or expand the work and credits upon departmental approval.

HORTICULTURE

This department offers instruction in pomology (fruits), olericulture (vegetables), floriculture (flowers) and ornamental gardening, and processing of horticultural crops. These courses prepare students to enter commercial production and the horticultural industries. Students are likewise prepared to enter the allied industries as horticultural workers with fertilizer companies, seed companies, equipment manufacturers, and others. Students who wish to enter specialized fields of research and teaching may take advanced work in the department.

Pomology and Olericulture Curriculum

	Semester	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 1, 3—General Chemistry.....	4	4
Bot. 20—Diseases of Plants.....	3	....
Hort. 5, 6—Fruit Production.....	3	2
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Electives .....	....	2
Total	20	18

Junior Year

Bot. 101—Plant Physiology.....	4	....
Bot. 111—Plant Anatomy.....	3	....
Soils 1—General Soils	3	....
Hort. 58—Vegetable Production .....	....	3
Hort. 59—Small Fruits.....	....	3
Speech 1, 2—Public Speaking.....	2	2
Econ. 37—Fundamentals of Economics.....	....	3
*Electives	6	6
Total	18	17

Senior Year

Bot. 125—Diseases of Fruit Crops.....	2	....
or		
Bot. 126—Diseases of Vegetable Crops.....	....	2
Hort. 101, 102—Technology of Fruits.....	2	2
or		
Hort. 103, 104—Technology of Vegetables.....	2	2
Zool. 104—Genetics	3	....
Bot. 115—Structure of Economic Plants.....	....	2
Hort. 118, 119—Seminar.....	1	1
*Electives	8	9
Total	16	16

* Electives must include a minimum total of seven credits from the following courses:
Hort. 22, 62, 106, 107, 108, 114, 116, 122.

Floriculture and Ornamental Horticulture Curriculum

	Semester	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 1, 3—General Chemistry.....	4	4
Bot. 11—Plant Taxonomy .....	.....	3
Bot. 20—Diseases of Plants.....	3	.....
Hort. 22—Landscape Gardening.....	2	.....
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	19	17
<i>Junior Year</i>		
Bot. 101—Plant Physiology.....	4	.....
Hort. 62—Plant Propagation	3	.....
Hort. 107, 108—Plant Materials	3	3
Bot. 111—Plant Anatomy.....	3	.....
Econ. 37—Fundamentals of Economics.....	.....	3
Soils 1—General Soils	3	.....
Bot. 123—Diseases of Ornamental Plants.....	.....	3
*Electives	2	8
Total	18	17
<i>Senior Year</i>		
Hort. 16—Garden Flowers.....	.....	3
Hort. 118, 119—Seminar.....	1	1
Speech 1, 2—Public Speaking	2	2
*Electives	14	12
Total	17	18
*Required of students specializing in floriculture:		
Hort. 11—Greenhouse Management .....	.....	3
Hort. 150, 151—Commercial Floriculture.....	3	3
Zool. 104—Genetics	3	.....
*Required of students specializing in landscape and ornamental horticulture:		
Hort. 152, 153—Landscape Design.....	3	3
Dr. 1, 2—Engineering Drawing.....	2	2
Surv. 1H—Plane Surveying .....	.....	3
Hort. 159—Nursery Management .....	.....	3
or		
Hort. 160—Landscape Maintenance .....	.....	3

Commercial Processing of Horticultural Crops Curriculum

	Semester	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
Chem. 31, 33—Elements of Organic Chemistry.....	2	2
Chem. 32, 34—Elements of Organic Laboratory.....	1	1
Soils 1—General Soils.....	3	....
Hort. 61—Processing Industries.....	....	2
Econ. 37—Fundamentals of Economics.....	....	3
Bact. 1—General Bacteriology.....	4	....
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities.....	1	1
Total.....	20	18

Junior Year

Speech 1, 2—Public Speaking.....	2	2
Phys. 1, 2—Elements of Physics.....	3	3
Hort. 155, 156—Commercial Processing.....	3	2
Bot. 101—Plant Physiology.....	4	....
Bact. 131—Food Bacteriology.....	4	....
Hort. 58—Vegetable Production.....	....	3
Zool. 1—General Zoology.....	....	4
Agr. Engr. 111—Fundamentals of Food Processing Plants.....	3	....
Agr. Engr. 112—Machinery and Equipment for Horticultural Processing.....	....	2
Electives.....	....	2
Total.....	19	18

Senior Year

Hort. 103, 104—Technology of Vegetables.....	2	2
Hort. 121—Plant Operation.....	2	....
Hort. 124—Quality Control.....	....	3
A. E. 105—Food Production Inspection.....	....	2
Hort. 118, 119—Seminar.....	1	1
and one of the following options:		

MANAGEMENT

Econ. 160—Labor Economics.....	3	....
B. A. 150—Market Management.....	3	....
B. A. 161—Personnel Management.....	....	3
Electives.....	2	4
Total.....	13	15

TECHNOLOGY

Chem. 19—Quantative Analysis.....	4	....
Bact. 52—Sanitary Bacteriology.....	....	2
Hort. 126—Nutritional Analyses of Processed Crops.....	....	3
Electives.....	4	2
Total.....	13	15

POULTRY HUSBANDRY

The curriculum in poultry husbandry is designed to give the student a thorough knowledge of subject matter necessary for poultry raising; the marketing, distribution, and processing of poultry products; poultry improvement work; and as a basis for graduate training for teaching and research in poultry husbandry.

The suggested curriculum will be modified to meet the special needs of individual students. Superior students, definitely anticipating preparation for a professional career in poultry husbandry, will be expected to take a language. However, all students majoring in poultry husbandry will be required to complete 24 semester hours in poultry husbandry.

Poultry Curriculum*

<i>Sophomore Year</i>	—Semester—	
	<i>I</i>	<i>II</i>
Eng. 3, 4 or 5, 6.....	3	3
Chem. 1, 3—General Chemistry.....	4	4
P. H. 2—Poultry Biology.....	....	2
Speech 1, 2—Public Speaking.....	2	2
H. 5, 6—History of American Civilization.....	3	3
Math. 5—General Mathematics.....	3	....
M. S. 3, 4—Elementary R. O. T. C. (Men).....	3	3
Physical Activities.....	1	1
Total	19	18
 <i>Junior Year</i>		
P. H. 101—Poultry Nutrition.....	3	....
P. H. 102—Physiology of Hatchability.....	....	3
P. H. 100—Poultry Breeding.....	....	2
*Zool. 20—Vertebrate Embryology.....	....	4
Bact. 1—General Bacteriology.....	4	....
Zool. 104—Genetics.....	3	....
Econ. 37—Fundamentals of Economics.....	....	3
B. A. 130—Elements of Business Statistics.....	3	....
Electives.....	4	5
Total	17	17

* Students planning to pursue this curriculum should elect P. H. 1 the first semester of the Freshman Year. If Agron. 1 is not elected the Freshman Year it must be elected in subsequent year.

* Required of students specializing in poultry genetics, physiology, or nutrition.

<i>Senior Year</i>	<i>Semester</i>	
	<i>I</i>	<i>II</i>
P. H. 104—Poultry Marketing Problems.....	3	....
P. H. 105—Egg Marketing Problems .....	....	3
V. S. 108—Avian Anatomy.....	3	....
V. S. 107—Poultry Hygiene.....	....	3
P. H. 103—Commercial Poultry Management.....	....	2
P. H. 107—Poultry Industrial and Economic Problems.....	2	....
Agr. Engr. 101—Farm Machinery (3).....	} 3-2	....
or		
Agr. Engr. 105—Farm Buildings (2).....	} 6-7	10
Electives		
Total	17	18

Pre-Forestry Students

The College of Agriculture is glad to cooperate with any student who wishes to attend the University to pursue courses which may be transferred to a standard forestry curriculum in another institution. The program which a student follows depends to some extent upon the forestry college he plans to enter. All pre-forestry students in the College of Agriculture are sent to the Head of the Department of Botany of the University for counsel and advice in these matters.

Pre-Theological Students

The College of Agriculture is glad to cooperate with the officers of any theological seminary who desire to urge its prospective students to pursue courses in agriculture as a preparation for the rural ministry. Such pre-theological students may enroll for a semester or more or for the usual four year training of the College. In either case they should enroll as members of the general curriculum in the College of Agriculture.

The electives of this curriculum may be used for such pre-theological requirements as seem desirable. Elections may be made from any of the offerings of the University such as history, political science, philosophy, agricultural economics, rural sociology, modern language, English, economics, psychology, sociology, natural science, education and the like. Students desiring to pursue a pre-theological program in the College of Agriculture of the University of Maryland, should consult with the president or admissions officer of the theological seminary which they expect to attend.

Pre-Veterinary Students

The College of Agriculture is glad to cooperate with any student who wishes to attend the University to pursue preparation for the study of Veterinary Science. The curriculum which a student will follow will depend to some extent upon the Veterinary College which he plans to enter. All Pre-Veterinary students in the College of Agriculture are sent to the Head of the Department of Veterinary Science of the University for counsel and advice in these matters.

Special Students in Agriculture

Mature students may, with consent of the Dean, register as special students and pursue a program of studies not included in any regular curriculum, but arranged to meet the needs of the individual. All university fees for these special students are the same as fees for regular students.

There are many young farmers who desire to take short intensive courses in their special lines of work during slack times on the farm. Arrangements have been made to permit such persons to register at the office of the Dean of the College of Agriculture and receive cards granting them permission to visit classes and work in the laboratories of the different departments. This opportunity is created to aid florists, poultrymen, fruit-growers, gardeners, or other especially interested persons who are able to get away from their work at some time during the year.

The regular charges are \$10.00 for matriculation and \$2.00 per credit hour per month for the time of attendance. One matriculation is good for any amount of regular or intermittent attendance during a period of four years.

The Dairy Building, College Park, Maryland



COURSE OFFERINGS

The University reserves the right to withdraw or discontinue any course for which an insufficient number of students have registered to warrant giving the course. In such an event, no fee will be charged for transfer to another course.

Courses are designated by numbers as follows:

1 to 99: courses for undergraduates.

100 to 199: courses for advanced undergraduates and graduates. (Not all courses numbered 100 to 199 may be taken for graduate credit.)

200 to 299: courses for graduates only.

A course with a single number extends through one semester. A course with a double number extends through two semesters.

Courses not otherwise designated are lecture courses. The number of hours' credit is shown by the arabic numeral in parentheses, after the title of the course.

A separate schedule of courses is issued each semester, giving the hours, places of meeting, and other information required by the student in making out his program. Students obtain these schedules when they register.

AGRICULTURAL ECONOMICS AND MARKETING

Professors De Vault, Hoecker, Beal, Baker; Associate Professors Walker, Hamilton, Poffenberger, Shull

For Advanced Undergraduates and Graduates

A. E. 100. Farm Economics (3)—First semester. Prerequisite, Econ. 31, 32, or Econ. 37.

A general course in agricultural economics, with special reference to population trends, the factors in agricultural production, agricultural wealth, land tenure, farm labor, agricultural credit, the tariff, price movements, and marketing. (Shull.)

A. E. 101. Marketing of Farm Products (3)—Second semester. Prerequisite, Econ. 31, 32, or Econ. 37.

The development of marketing, its scope, channels, and agencies of distribution, functions, costs, methods used, and services rendered. (Shull.)

A. E. 103. Cooperation in Agriculture (3)—First semester.

Historical and comparative development of farmers' cooperative organizations; reasons for failure and essentials to success; commodity developments; operative practices; banks for cooperatives; present trends. (Poffenberger.)

A. E. 104. Farm Finance (3)—Second semester.

A study of credit principles as applied to private and cooperative farm businesses and the agencies extending farm credit. The needs for and benefits

of farm insurance, including fire, crop, livestock, and life insurance.

(Poffenberger.)

A. E. 105. Food Products Inspection (2)—Second semester. One lecture and one laboratory period a week.

This course is designed to give students primary instruction in the grading, standardizing and inspection of fruits and vegetables, dairy products, poultry products, meats, and other food products. Theoretical instruction will be given in the form of lectures, while the demonstrational and practical work will be conducted through laboratories and field trips to Washington, D. C., and Baltimore.

(Staff.)

A. E. 106. Prices of Farm Products (3)—Second semester.

A general course in prices, price relationships, and price analysis, with emphasis on prices of agricultural products.

(Poffenberger.)

A. E. 107. Analysis of the Farm Business (3)—First semester.

A concise, practical course in the keeping, summarizing, and analyzing of farm accounts.

(Hamilton.)

A. E. 108. Farm Management (3)—Second semester.

A study of the organization and operation of farms from the standpoint of efficiency, selection of farms, size of farms, leasing systems, and factors affecting profits. Students will make an analysis of the actual farm business and practices of different types of farms, and make specific recommendations as to how these farms may be organized and operated as successful businesses.

(Hamilton.)

A. E. 109. Research Problems (1-2)—First and second semesters.

With the permission of the instructor, students will work on any research problems in agricultural economics. There will be occasional class meetings for the purpose of making reports on progress of work.

(De Vault.)

A. E. 110. Seminar (1, 1)—First and second semesters.

Students will prepare and present reports on economic literature and current agricultural economic problems.

(Hamilton.)

A. E. 111. Land Economics (3)—First semester.

Concepts of land economy are discussed, as well as conditions and tendencies influencing land requirements in relation to land resources; a study of major land problems and land policies; farm tenancy; tax delinquency and tax reverted lands; land use adjustments; and measures for better use of our land resources.

(———.)

A. E. 114. Foreign Trade in Farm Products (3)—Second semester.

Trends in world trade for agricultural products; the position of the United States in world trade of agricultural products; farm relief measures and international trade; reciprocal trade agreements; postwar developments.

(Shull.)

A. E. 115. Marketing of Dairy Products (3)—First semester.

A study of principles and practices in the marketing of milk and manufactured dairy products, including the influence of significant geographical and institutional relationships on costs and methods of distribution. (Beal.)

A. E. 116. Marketing of Fruits and Vegetables (2)—Second semester.

A study of principles and practices in the marketing of fresh and processed fruits and vegetables, including the influence of significant geographical and institutional relationships on costs and methods of distribution. (Hoecker.)

Poultry Marketing Problems. See Poultry Husbandry, P. H. 104.

Egg Marketing Problems. See Poultry Husbandry, P. H. 105.

Poultry Industrial and Economic Problems. See Poultry Husbandry, P. H. 107.

Market Milk. See Dairy Husbandry, D. H. 109.

Livestock Markets and Marketing. See Animal Husbandry, A. H. 150.

Meat and Meat Products. See Animal Husbandry, A. H. 160.

Economics of Consumption. See Economics, Econ. 130.

Economics of Cooperatives. See Economics, Econ. 151.

Advertising Programs and Campaigns. See Business Administration, B. A. 151.

Retail Store Management. See Business Administration, B. A. 154.

For Graduates

A. E. 200, 201. Special Problems in Farm Economics (2, 2)—First and second semesters.

An advanced course dealing extensively with some of the economic problems affecting the farmer, such as land values, taxation, credit, prices, production adjustments, transportation, marketing, and cooperation.

(De Vault.)

A. E. 202. Seminar (1)—First and second semesters.

This course will consist of special reports by students on current economic subjects, and a discussion and criticism of the same by the members of the class and instructional staff.

(De Vault.)

A. E. 203. Research—Credit according to work accomplished.

Students will be assigned research in agricultural economics under the supervision of the instructor. The work will consist of original investigation in problems of agricultural economics.

(Staff.)

A. E. 205. Special Problems in Dairy Marketing (2)—Second semester. Prerequisite, A. E. 115 or equivalent.

An advanced course dealing with complex economic problems in dairy marketing which have developed because of the seasonal production and

perishability of milk, its multiple uses, and the competitive structure of the industry. (Beal.)

A. E. 208. Agricultural Policy (3)—Second semester.

The evolution of agricultural policy in the United States, emphasizing the origin and development of governmental programs, and their effects upon agricultural production, prices and income. (Beal.)

A. E. 210. Taxation in Relation to Agriculture (2)—Second semester.

Principles and practices of taxation in their relation to agriculture, with special reference to the trends of tax levies, taxation in relation to land utilization, taxation in relation to ability to pay and benefits received. (Walker.)

A. E. 211. Agricultural Taxation in Theory and Practice (3)—First semester. Two lectures and one laboratory period a week.

Economic effects of taxation upon the welfare of rural society; theory of the general property tax, business and license taxes, the income tax, the sales tax, special commodity taxes, inheritance and estate taxes as applied to the support of rural governmental functions; practical and current problems in taxation. (Walker.)

A. E. 212, 213. Land Utilization and Agricultural Production (3, 3)—First and second semesters.

A presentation, by regions, of the basic physical conditions of climate, topography and soils; the economic and social forces that have influenced agricultural settlement and the resultant utilization of the land; followed by a consideration of the regional trends and interregional shifts in land utilization and agricultural production. (Baker.)

A. E. 214. Consumption of Farm Products and Levels of Living (3)—Second semester.

A presentation of trends in the national per capita consumption of farm products, followed by studies based principally on the Consumers' Purchase Survey; regional and local variations in consumption and levels of living. (Baker.)

A. E. 215. Advanced Agricultural Cooperation (3)—First semester.

An appraisal of agricultural cooperation as a means of improving the financial status of farmers. More specifically, the course includes a critical analysis and appraisal of specific types and classes of cooperatives. (Poffenberger.)

A. E. 216. Advanced Farm Management (3)—Second semester.

An advanced course in farm organization and management which applies the economic principles of farm production to the operation of farms of different sizes, types, operations, and geographical locations. Consideration is also given to adjustments which have taken place in farming in specific areas and probable changes in the future. (———)

A. E. 217, 218. Agricultural Economics Research Techniques (2, 2)—First and second semesters.

A study and an appraisal of agricultural economics research techniques. Experience is given in outlining and conducting research projects. A critical appraisal is made of methods of analysis and the presentation of results. (Hoecker.)

AGRICULTURAL EDUCATION AND RURAL LIFE

Professor Ahalt

R. Ed. 1. Introduction to Agriculture (1)—First semester. Required of all Freshmen in the College of Agriculture.

A series of lectures introducing the student to the broad field of agriculture.

For Advanced Undergraduates and Graduates

R. Ed. 101. Teaching Farm Practicum and Demonstrations (2)—First semester. Two laboratory periods a week. No graduate credit allowed.

This course is designed to assist the student in relating the learning acquired in the several departments with the problems of doing and demonstrating which he faces in the field and in the classroom as a teacher of agriculture. Deficiencies are checked and corrected by laboratory practice. (Ahalt.)

R. Ed. 103. Practice Teaching (5)—First semester. Open only to students majoring in Agriculture Education who have a satisfactory scholastic average. No graduate credit allowed.

Under the direction of a critic teacher the student is required to analyze and prepare special units of subject matter in agriculture, plan and teach lessons, supervise farming programs of students and otherwise perform the duties of a high school teacher of vocational agriculture. Not less than 125 clock hours, exclusive of observation, shall be required. (Ahalt.)

R. Ed. 104. Practice Teaching (1-4)—First and second semesters. Prerequisite, R. Ed. 103 or concurrent registration therein. No graduate credit allowed.

For those students wishing to acquire additional experience in teaching. (Ahalt.)

R. Ed. 107. Observation and Analysis of Teaching in Agriculture (3)—Second semester. Two lectures and one laboratory period a week.

This course deals with an analysis of pupil learning in class groups. (Ahalt.)

R. Ed. 109. Teaching Secondary Vocational Agriculture (3)—First semester.

A comprehensive course in the work of high school departments of vocational agriculture. It emphasizes particularly placement, supervised farming programs, the organization and administration of Future Farmer activities, and objectives and methods in all-day instruction. (Ahalt.)

R. Ed. 111. Teaching Young and Adu't Farmer Groups (1)—First semester.

Characteristics of young and adult farmer instruction in agriculture. Determining needs for organizing a course; selecting materials for instruction; and class management. Emphasis is placed on the conference method of teaching. (Ahalt.)

R. Ed. 112. Departmental Management (1)—Second semester. One laboratory period a week. Prerequisites, R. Ed. 107, 109.

The analysis of administrative programs for high school departments of vocational agriculture. Investigations and reports. (Ahalt.)

R. Ed. 114. Rural Life and Education (3)—Second semester.

An intensive study of the educational agencies at work in rural communities, stressing an analysis of school patronage areas, the possibilities of normal life in rural areas, early beginnings in rural education, and the conditioning effects of educational offerings. (Ahalt.)

For Graduates

R. Ed. 201, 202. Rural Life and Education (3, 3)—First and second semesters. Prerequisite, R. Ed. 114 or equivalent.

A sociological approach to rural education as a movement for a good life in rural communities. (Ahalt.)

R. Ed. 207, 208. Problems in Vocational Agriculture (2, 2)—First and second semesters.

In this course special emphasis is placed upon the current problems facing teachers of vocational agriculture. It is designed especially for persons who have had several years of teaching experience in this field. (Ahalt.)

R. Ed. 220. Field Problems in Rural Education (1-3)—First and second semesters. Prerequisite, six semester hours of graduate study.

Problems accepted depend upon the character of the work of the student and the facilities available for study. Periodic conferences required. Final report must follow accepted pattern for field investigations. (Ahalt.)

R. Ed. 250. Seminar in Rural Education (1-2)—First and second semesters.

Problems in the organization, administration, and supervision of the several agencies of rural education. Investigations, papers, and reports. (Ahalt.)

R. Ed. 251. Research—Credit hours according to work done. (Ahalt.)

AGRICULTURAL ENGINEERING

Professor Carpenter, Associate Professor Gienger

For Advanced Undergraduates and Graduates

Agr. Engr. 101. Farm Machinery (3)—First semester. Two lectures and one laboratory period a week.

A study of the economics, design and adjustments of modern horse and tractor-drawn machinery, including applications of electricity to farm operations. Laboratory work consists of detailed study of actual machines, their calibration, adjustment, and repair. (Gienger.)

Agr. Engr. 102. Gas Engines, Tractors and Automobiles (3)—Second semester. Two lectures and one laboratory period a week.

A study of the design, operation, and repair of the internal combustion engines, tractors, and automobiles used in farm practice. (Carpenter.)

Agr. Engr. 104. Farm Mechanics (2)—First semester. Two laboratory periods a week.

This course consists of laboratory exercises in practical farm shop and farm equipment repair and construction projects, and a study of the principles of shop organization and administration. It is available only to seniors in agricultural education. (Gienger.)

Agr. Engr. 105. Farm Buildings (2)—First semester.

A study of all types of farm structures; also of farm lighting, heating, water supply and sanitation systems. (Carpenter.)

Agr. Engr. 106. Farm Mechanics (2)—Second Semester. Two laboratory periods a week.

Laboratory exercises covering practical projects in farm shop work and in the repair and construction of farm equipment. (Gienger.)

Agr. Engr. 107. Farm Drainage (2)—Second semester. One lecture and one laboratory period a week.

A study of farm drainage systems, including theory of tile under-drainage, the depth and spacing of laterals, calculation of grades, methods of construction, and the use of engineering instruments. A smaller amount of time will be spent upon drainage by open ditches, and the laws relating thereto. (Carpenter.)

Agr. Engr. 111. Fundamentals of Food Processing Plants (3)—First semester. Two lectures and one laboratory period a week.

A study of the mechanical appliances and accessories, such as boilers, pumps, motors, refrigeration units, controls, etc., adapted to food processing plants. (—————)

Agr. Engr. 112. Machinery and Equipment for Horticultural Processing (2)—Second semester. One lecture and one laboratory period a week.

This course covers the design, operation and maintenance of the machines and equipment used in the commercial processing of fruits and vegetables. (—————)

AGRONOMY AND SOILS

Professors Kuhn and Thomas; Associate Professor Axley; Assistant Professor Ronningen; Instructor Liden.

A. CROPS

Agron. 1. Crop Production (3)—First and second semesters. Two lectures and one laboratory period a week.

Culture, use, improvement, adaptation, distribution, and history of Cereal and Forage Crops.

Agron. 30. Cereal Crop Production (3)—First semester. Two lectures and one laboratory period a week.

Continuation study of investigations in Cereal Crop production.

Agron. 31. Forage Crop Production (3)—Second semester. Two lectures and one laboratory period a week.

Continuation study of investigations in Forage Crop production.

For Advanced Undergraduates and Graduates

Agron. 103. Crop Breeding (2)—First semester. Prerequisite, Zool. 104. The principles of breeding as applied to field crop plants and methods used in plant improvement. (Ronningen.)

Agron. 151. Cropping Systems (2)—Second semester.

The bringing to bear of information, from various courses upon the development of balanced cropping systems, appropriate to different objectives and different areas of the State. (Kuhn.)

Agron. 152. Seed Production and Distribution (2)—Second semester. History of seed production, processing, and distribution; current problems; Federal and State seed control programs; and release of new varieties and maintenance of foundation seed stocks. (Liden.)

Agron. 153.—Selected Crop Studies (2-4)—First and second semesters. Prerequisite, Agron. 1, Agron. 30 and 31. Advanced individual study of field crops of special interest to the student. (Staff.)

For Graduates

Agron. 201. Crop Breeding (2-4)—First semester. Prerequisite, consent of instructor. (Ronningen.)

Similar to Agron. 103, but better adapted to graduate students and offering a wider range of choice of material to suit special cases.

Agron. 203. Seminar (1)—First and second semesters.

Reports by students on current scientific publications on crops or soils.

Agron. 204. Technic in Field Crop Research (2)—First semester. Field plot technic, application of statistical analysis to Agronomic data, and preparation of the research project. (Kuhn.)

Agron. 209. Research (4-8)—First and second semesters. (Staff.)

Credit according to work accomplished. With approval or suggestion of the head of the department, the student will choose his own problem for study.

B. SOILS

Soils 1. General Soils (3)—First semester. Prerequisites, Chem. 1

A broad conception of the fundamentals of soils showing the origin, development, relation to natural sciences, soil uses, effect on civilization, soil properties and relation to soils problems.

Soils 2. Soil Fertility Principles (3)—Second semester. Two lectures and one two-hour demonstration laboratory each week. Prerequisites, Soils 1, Organic Chemistry, General Bacteriology.

A study of the biological, chemical and physical characteristics of soils that are important in growing crops. Soil deficiencies of physical, fertility or biological nature and their correction by the use of lime, fertilizers, organic materials and rotations are discussed and illustrated.

Soils 51. Soil Investigation Methods (2)—First semester. Two three-hour laboratory periods a week. Prerequisites, Soils 2 and Quantitative and Organic Chemistry or registration therein.

A laboratory study of the common biological, chemical, and physical methods of examining a soil to determine its nutritional needs and fertility level.

For Advanced Undergraduates and Graduates

Soils 103. Soil Geography (3)—Second semester. Two lectures and one two-hour laboratory period a week. Prerequisites, Soils 1 and Geology.

A study of the factors and processes of soil formation in the world and in Maryland, the relation of soils to related geographic features, the development and use of soil classification and soil capability grouping and uses. The laboratory period is used largely for field trips to examine soils in place. (Thomas.)

Soils 112. Soil Conservation (3)—First semester. Two lectures and one three-hour laboratory period a week. Prerequisite, Soils 1.

A study of the factors affecting the preservation of the desired physical, chemical, and biological functions of soil and soil moisture; the influence of soil deterioration on society; methods of soil conservation. Field trips are made to farms using different conservation practices. (Thomas.)

Soils 120. Soil Management (3)—Second semester. Prerequisites, Soils 2 and Soils 103.

A study is made of detailed soil problems and their solutions; soil management practice for maximum production and soil maintenance; and the relation of soils to agriculture and society in general. (Thomas.)

For Graduates

Soils 201. Special Problems and Research (10-12)—First and second semesters. Laboratory and library work.

Original investigations of physical, chemical and biological soil problems and their relation to lime, fertilizer and nutritional studies.

(Thomas and Axley.)

Soils 202, 203. Soil Science (3, 3)—First and second semesters. Three discussion periods a week. Prerequisite, approval of instructor.

A review of the development and modern conceptions of the physical, biological, and chemical nature of soils and their contribution to soil science.

(Thomas and Axley.)

Soils 212, 213. Soil Research Technique (2, 2)—First and second semesters. Two three-hour laboratory periods a week. Prerequisite, approval of instructor.

A laboratory study of methods, technique, and equipment used to investigate the various soil problems. It is the laboratory part of the soil science course.

(Thomas and Axley.)

ANIMAL HUSBANDRY

Professors Foster, Green; Associate Professors Outhouse, Kerr;
Instructor Buric; Lecturer Finney

A. H. 1. Fundamentals of Animal Husbandry (3)—First and second semesters. Two lectures and one laboratory period a week.

A study of the types, breeds and market classes of beef cattle, sheep, swine, and horses; general problems in breeding, feeding, management and marketing. Practice in the selection and judging of livestock. A field trip may be made to a packing plant in Baltimore.

A. H. 31. Livestock Judging (2)—Second semester. Two laboratory periods a week. Prerequisite, A. H. 1.

Training in judging of beef cattle, sheep, swine and horses. Occasional trips to farms where outstanding herds and flocks are maintained.

For Advanced Undergraduates and Graduates

A. H. 100. Advanced Livestock Judging (2)—First semester. Two laboratory periods a week. Prerequisite, A. H. 31. No graduate credit allowed.

An advanced course in the selection and judging of purebred and commercial meat and work animals. The most adept students enrolled in this course are chosen to represent the University of Maryland in intercollegiate livestock judging contests.

(Kerr, Outhouse.)

A. H. 110. Feeds and Feeding (3)—First semester. Two lectures and one laboratory period a week. Prerequisites, Chem. 1, 3. No graduate credit allowed.

Elements of nutrition, source, characteristics, and adaptability of the various feeds to the several classes of livestock; feeding standards; the calculation and compounding of rations. (Outhouse.)

A. H. 111. Animal Nutrition (3)—First semester. Prerequisites, Chem. 31, 32, 33, 34; A. H. 110. Graduate credit allowed.

Processes of digestion, absorption, and metabolism of nutrients; nutritional balances; nature of nutritional requirements for growth, production and reproduction. (Shaw.)

A. H. 120. Principles of Breeding (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, Zool. 104. Graduate credit allowed with permission of instructor.

The practical aspects of animal breeding, heredity, variation, selection, development, systems of breeding, and pedigree work are considered. (Green.)

A. H. 130. Beef Cattle Production (3)—First semester. Two lectures and one two-hour laboratory. Prerequisites, A. H. 1, A. H. 110. No graduate credit allowed.

Principles and practices underlying the economical production of beef cattle, including a study of breeds and their adaptability; breeding, feeding and management and marketing of purebred and commercial herds. (Foster.)

A. H. 131. Sheep Production (3)—Second semester. Two lectures and one two-hour laboratory. Prerequisites, A. H. 1, A. H. 110. No graduate credit allowed.

Principles and practices underlying economical production of sheep, including a study of the breeds and their adaptability; breeding, feeding and management of purebred and commercial flocks. (Outhouse.)

A. H. 132. Swine Production (3)—Second semester. Two lectures and one two-hour laboratory. Prerequisites, A. H. 1 and A. H. 110. No graduate credit allowed.

Principles and practices underlying the economical production of swine; breeding, feeding and management of purebred and commercial herds; breeds of swine and their adaptability. (Kerr.)

A. H. 133. Horse Production (3)—First semester. Two lectures and one two-hour laboratory. Prerequisites, A. H. 1 and A. H. 110. No graduate credit allowed.

Principles and practices underlying economical production and use of draft horses, including a study of breeds and their adaptability.

A study of the light horse breeds with emphasis on the types and usefulness of each. A discussion of principles of selection and breeding of light horses is included in this course. (Outhouse, Finney.)

A. H. 135. Light Horse Production (1)—Second semester. Prerequisite, A. H. 133. No graduate credit allowed.

Included is a study of the organization of the light horse farm, proper methods of feeding and training, control of disease, treatment and care of injuries, sale of surplus stock. (Finney.)

A. H. 140. Livestock Management (3)—Second semester. One lecture and two laboratory periods a week. Prerequisite, A. H. 1. No graduate credit allowed.

A course designed to familiarize students with various systems of livestock farming, together with practical methods of handling and managing livestock. Practice and training in the feeding, fitting and preparation of animals for show and work purposes and commercial meat production.

(Outhouse, Buric.)

A. H. 150. Livestock Markets and Marketing (2)—First semester. Prerequisite, A. H. 1. Graduate credit allowed.

History and development of livestock markets and systems of marketing; trends of livestock marketing; effect of changes in transportation and refrigeration facilities; the merchandising of meat products. (Kerr.)

A. H. 160. Meat and Meat Products (3)—Second semester. One lecture and two laboratory periods a week. Prerequisite, A. H. 1. No graduate credit allowed.

Designed to give information on the processing and handling of the nation's meat supply. A study of the physical and structural qualities which affect the value of meat and meat products. Trips are made to packing houses and meat distributing centers. (Kerr.)

A. H. 170-171. Seminar (1, 1)—Lectures, discussions and assigned readings. (Staff.)

A. H. 172-173. Special Problems in Animal Husbandry (1-2, 1-2)—Prerequisite, approval of Staff. (Staff.)

For Graduates

A. H. 201. Special Problems in Animal Husbandry (2-4)—Credit given in proportion to amount of work completed.

Problems which relate specifically to the character of work the student is pursuing will be assigned. (Staff.)

A. H. 202, 203. Seminar (1, 1)—First and second semesters.

Students are required to prepare papers based upon current scientific publications relating to animal husbandry or upon their research work for presentation before and discussion by the class. (Staff.)

A. H. 204. Research—Credit to be determined by the amount and character of work done.

With the approval of the head of the department, students will be required to pursue original research in some phase of animal husbandry, carrying the same to completion, and report the results in the form of a thesis. (Staff.)

A. H. 205. Advanced Breeding (2)—Second semester. Prerequisites, A. H. 120 or equivalent and Biological Statistics.

This course deals with the more technical phases of heredity and variation; selection and selection indices; breeding systems; inheritance in farm animals. (Green.)

A. H. 206, 207. Advanced Livestock Management (3, 3)—First and second semesters. Two lectures and one laboratory period a week.

An intensive study of the newer developments in animal breeding, animal physiology, animal nutrition, endocrinology and other closely allied fields as they apply to the management and commercial production of livestock. (Staff.)

BOTANY

Professors Bamford, Appleman, Jehle, Norton (emeritus); Lecturers Steiner, Brierley; Associate Professors Brown, Jeffers, Gauch, Cox; Assistant Professors Morgan, Weaver; Instructors Moore, Rappleye.

Bot. 1. General Botany (4)—First and second semesters. Two lectures and two laboratory periods a week.

General introduction to botany, touching briefly on all phases of the subject. Emphasis is on the fundamental biological principles of the higher plants. Laboratory fee, \$5.00.

Bot. 2. General Botany (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisite, Bot. 1.

A brief evolutionary study of algae, fungi, liverworts, mosses, ferns and their relatives, and the seed plants, emphasizing their structure, reproduction, habitats, and economic importance. Laboratory fee, \$5.00.

Bot. 11. Plant Taxonomy (3)—Second semester. One lecture and two laboratory periods a week. Prerequisite, Bot. 1, or equivalent.

A study of the principles of plant classification, based on the collection and identification of local plants. Laboratory fee, \$5.00.

Bot. 20. Diseases of Plants (3)—First semester. Two lectures and one laboratory period a week. Prerequisite, Bot. 1, or equivalent.

An introductory study of the symptoms and causal agents of plant diseases and measures for their control. Laboratory fee, \$5.00.

For Advanced Undergraduates

Bot. 110. Plant Microtechnique (2)—Second semester. Two laboratory periods a week. Prerequisite, Bot. 1.

Principles and methods involved in the preparation of permanent microscope slides of plant materials. Laboratory fee, \$5.00. (Rappleye.)

Bot. 112. Seminar (1)—First and second semesters.

Discussion of special topics, current literature, problems and progress in all phases of botany. For seniors only, majors and minors in botany or biological science. (Brown.)

A. Plant Physiology

For Advanced Undergraduates and Graduates

Bot. 101. Plant Physiology (4)—First semester. Two lectures and two laboratory periods a week. Prerequisites, Bot. 1 and General Chemistry.

A survey of the general physiological activities of plants. Laboratory fee, \$5.00. (Gauch.)

Bot. 102. Plant Ecology (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, Bot. 11, or equivalent.

A study of plants in relation to their environments. Plant successions and formations of North America are treated briefly and local examples studied. (Brown.)

For Graduates

Bot. 201. Plant Biochemistry (4)—First semester. Two lectures and two laboratory periods a week. Prerequisites, Bot. 101 and elementary organic chemistry, or equivalent. (Laboratory only (2 credits) given in 1949-1950. Lectures are prerequisite.)

A study of the important substances in the composition of the plant body and the chemical changes occurring therein. Laboratory fee, \$5.00. (Gauch.)

Bot. 202. Plant Biophysics (2)—First semester. Prerequisites, Bot. 101 and introductory physics, or equivalent.

An advanced course dealing with the operation of physical phenomena in plant life processes. (Gauch, ———.)

Bot. 203. Biophysical Methods (2)—First semester. Two laboratory periods a week. Laboratory course to accompany Bot. 202. Laboratory fee, \$5.00. (—————)

Bot. 204. Growth and Development (2)—Second semester. Prerequisite, 12 semester hours of plant science. (Gauch.)

Bot. 205. Salt Nutrition Seminar (1)—(Not given in 1949-1950).

Reports on current literature are presented and discussed in connection with recent advances in the mineral nutrition of plants. (Gauch.)

Bot. 206. Research in Plant Physiology—Credit according to work done. Students must be qualified to pursue with profit the research to be undertaken. (Appleman, Gauch.)

B. Plant Morphology and Taxonomy

For Advanced Undergraduates and Graduates

Bot. 111. Plant Anatomy (3)—First semester. One lecture and two laboratory periods a week. Prerequisite, Bot. 110, or equivalent.

The origin and development of the organs and tissue systems in the vascular plants. Laboratory fee, \$5.00. (Rappleye.)

Bot. 113. Plant Geography (2)—First semester. Prerequisite, Bot. 1, or equivalent.

A study of plant distribution throughout the world and the factors generally associated with such distribution. (Brown.)

Bot. 114. Advanced Plant Taxonomy (3)—First semester. One lecture and two laboratory periods a week. Prerequisite, Bot. 11, or equivalent.

Principles and criteria of plant classification. Reviews and criticisms of current taxonomic literature. Collection and classification of Maryland plants. Laboratory fee, \$5.00. (Brown.)

Bot. 115. Structure of Economic Plants (2)—Second semester. Two laboratory periods a week. Prerequisite, Bot. 111.

A detailed microscopic study of the anatomy of the chief fruit and vegetable crops. Laboratory fee, \$5.00. (Rappleye.)

Bot. 116. History and Philosophy of Botany (1)—First semester. Prerequisite, 15 semester hours of botany.

Discussion of the development of ideas and knowledge about plants, leading to a survey of contemporary work in botanical science. (Bamford.)

Bot. 117. Plant Breeding (2)—Second semester. Prerequisites, Zool. 104 or equivalent.

A survey of the fundamental principles to modern plant breeding. The analysis of hybrid vigor, its application to economic plants, the relation of chromosomes to plant improvement, economically valuable mutations and similar topics will be considered. (Morgan.)

For Graduates

Bot. 211. Cytology (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisites, Bot. 110 and Zool. 104 (Genetics) or equivalent.

A detailed study of the chromosomes in mitosis and meiosis, and the relation of these to current theories of heredity and evolution. Laboratory fee, \$5.00. (Bamford, Morgan.)

Bot. 212. Plant Morphology (2)—First semester. Two laboratory periods a week. Prerequisites, Bot. 11, Bot. 111, or equivalent.

A comparative study of the morphology of the flowering plants, with special reference to the phylogeny and development of floral organs. Laboratory fee, \$5.00. (Rappleye.)

Bot. 213. Seminar in Plant Cytology and Morphology (1)—First and second semesters. Prerequisite, permission of instructor.

Discussion of special topics in plant morphology, anatomy, and cytology. (Bamford, Morgan.)

Bot. 214. Research in Plant Cytology and Morphology—Credit according to work done. (Bamford, Morgan.)

Bot. 215. Plant Cytogenetics (3)—First semester. Two lectures and one laboratory period a week. Prerequisites, Zool. 104, Bot. 211.

An advanced study of the current status of plant genetics, particularly gene mutations and their relation to chromosome changes in corn and other favorable genetic materials. Laboratory fee, \$5.00. (Morgan.)

C. Plant Pathology

For Advanced Undergraduates and Graduates

Bot. 122. Research methods in Plant Pathology (2)—First and second semesters. Two laboratory periods a week. Prerequisite, Bot. 20, or equivalent.

Advanced training in the basic research techniques and methods of plant pathology. Laboratory fee, \$5.00 each semester. (Cox.)

Bot. 123. Diseases of Ornamental Plants (2)—Second semester. Prerequisite, Bot. 20, or equivalent.

Symptoms, control measures, and other pertinent information concerning the diseases which affect important ornamental plants grown in the eastern states. (Jeffers.)

Bot. 124. Diseases of Tobacco and Agronomic Crops (2)—(Not offered 1949-1950). Prerequisite, Bot. 20, or equivalent.

The symptoms and control of the diseases of tobacco, forage crops and cereal grains. (—————)

Bot. 125. Diseases of Fruit Crops (2)—First semester. Prerequisite, Bot. 20, or equivalent.

Symptoms and control of the diseases affecting fruit production in the eastern United States. (Weaver.)

Bot. 126. Diseases of Vegetable Crops (2)—(Not offered 1949-1950). Prerequisite, Bot. 20, or equivalent.

The recognition and control of diseases affecting the production of important vegetable crops grown in the eastern United States. (Cox.)

Bot. 128. Mycology (4)—First semester. Two lectures and two laboratory periods a week. Prerequisite, Bot. 2, or equivalent.

An introductory study of the morphology, classification, life histories, and economics of the fungi. Laboratory fee, \$5.00. (Jeffers.)

For Graduates

Bot. 221. Virus Diseases (3)—Second semester. Two lectures and one laboratory period a week. Prerequisites, Bot. 20 and Bot. 101.

Consideration of the physical, chemical and physiological aspects of plant viruses and plant virus diseases. Laboratory fee, \$5.00. (Brierley.)

Bot. 222. Plant Nematology (2)—(Not offered 1949-1950). Prerequisite, Bot. 20, or equivalent.

A detailed study of the nematodes which cause plant diseases, especially their life history, plant symptoms and control measures. (Steiner.)

Bot. 225. Research in Plant Pathology—Credit according to work done. (Staff.)

Bot. 226. Plant Disease Control (3)—First semester. Prerequisite, Bot. 20, or equivalent.

An advanced course dealing with the theory and practices of plant disease control. (Cox.)

Bot. 229. Seminar in Plant Pathology (1)—First and second semesters. Discussion on the advanced technical literature of plant pathology. (Jeffers, Cox.)

DAIRY

Professors Cairns and Shaw; Associate Professor Warren;
Instructors Ellmore, Johnson and Stout

A. DAIRY HUSBANDRY

Dairy 1. Fundamentals of Dairying (3)—Second semester. Two lectures and one laboratory period a week.

This course is designed to cover the entire field of dairying. The content of the course deals with all phases of dairy cattle feeding, breeding and management and the manufacturing, processing, distributing and marketing of dairy products. Laboratory fees, \$3.00.

Dairy 30. Dairy Cattle Judging (2)—Second semester. Two laboratory periods a week.

This course offers complete instruction in the selection and comparative judging of dairy cattle. Trips to various dairy farms for judging practice will be made.

For Advanced Undergraduates and Graduates

Dairy 100. Dairy Cattle Management (1)—First semester. One laboratory period a week. Prerequisite, Dairy 1.

A management course designed to familiarize students with the practical handling and management of dairy cattle. Students are given actual practice and training in the University dairy barns. (Ellmore.)

Dairy 101. Dairy Production (3)—Second semester. Two lectures and one laboratory period a week. Prerequisites, Dairy 1, A. H. 110.

A comprehensive course in dairy cattle feeding, breeding and herd management, designed for advanced students in dairy husbandry. (Cairns.)

Dairy 105. Dairy Breeds and Breeding (2)—First semester. Prerequisites, Dairy 1, Zool. 104, A. H. 120.

A study of the historical background; characteristics, prominent blood lines; noted families and individuals of the major dairy breeds. A survey of breeding systems; genetic and environmental factors as applied to dairy cattle. The use of the pedigree, various indices, herd and production records in selection and formulating breeding programs. (Cairns.)

Dairy 120, 121. Dairy Seminar (1, 1)—First and second semesters. Prerequisites, students majoring in dairy production Dairy 1, 101; students majoring in dairy products technology Dairy 1, 108.

Presentation and discussion of current literature and research work in dairying. (Cairns.)

Dairy 124. Special Problems in Dairying A (2-4)—First and second semesters. Prerequisite, Dairy 1, 101. Credit in accordance with the amount and character of work done.

Special problems will be assigned which relate specifically to the work the student is pursuing. (Cairns, Shaw.)

B. DAIRY PRODUCTS TECHNOLOGY

Dairy 40. Grading Dairy Products (1)—Second semester. One laboratory period a week.

Market grades and the judging of milk, butter, cheese, and ice cream. Laboratory fee, \$3.00.

Dairy 41. Advanced Grading of Dairy Products (1)—First semester. Prerequisite, Dairy 40.

An advanced course in grading and judging of milk, butter, cheese, and ice cream. Open to students who participate in training for intercollegiate dairy products judging contests. Laboratory fee, \$3.00.

Advanced Undergraduates and Graduates

Dairy 108. Dairy Technology (4)—First semester. Two lectures and two laboratory periods a week. Prerequisites, Dairy 1, Bact. 133, Chem. 1, 3.

Composition standards for milk and milk products, critical interpretation and application of practical factory methods of analyses for fat and solids; quality tests. Laboratory fee, \$3.00 (Johnson.)

Dairy 109. Market Milk (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisites, Dairy 1, Bact. 1, 133, Chem. 1, 3.

Commercial aspects of the market milk industry relating to transportation, processing, and distribution; operation of a market milk plant; quality problems; chocolate milk, buttermilk and cottage cheese. Laboratory fee, \$3.00. (Johnson.)

Dairy 110. Butter and Cheese Making (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisites, Dairy 1, Bact. 1, Chem. 1, 3. (Alternate years, not given in 1949-1950.)

Commercial methods of manufacturing butter and cheese. Consideration is given to the physical, chemical, and biological factors involved; procedures of manufacture; quality control. Laboratory fee, \$3.00. (Warren.)

Dairy 111. Concentrated Milk Products (2)—Second semester. One lecture and one laboratory period a week. Prerequisites, Dairy 1, 108, 114. (Alternate years, given in 1949-1950.)

Theories and practice of manufacturing condensed and evaporated milk and milk powder; plant processes; quality factors; utilization. Laboratory fee, \$3.00. (Warren.)

Dairy 112. Ice cream Making (4)—First semester. Two lectures and two laboratory periods a week. Prerequisites, Dairy, 1, 108, 114.

The ice cream industry; commercial methods of manufacturing ice cream; fundamental principles; ingredients; controlling quality. Laboratory fee, \$3.00. (Warren.)

Dairy 114. Special Laboratory Methods (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisites, Dairy 1, 108, Bact. 1, 133, Chem. 1, 3, 19, 31, 32, 33, 34.

Application of analytical methods to milk, milk products and milk constituents. Laboratory fee, \$3.00. (Johnson.)

Dairy 115. Dairy Inspection (2)—First semester. One lecture and one laboratory period a week. Prerequisites, Dairy 1, 109.

Study and interpretation of dairy ordinances and standards; application to farm and plant inspection. (—————.)

Dairy 116. Dairy Plant Management (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisites, at least three advanced dairy products technology courses.

Principles of dairy plant management, record systems; personnel, plant design and construction; dairy machinery and equipment. (Warren, Stout.)

Dairy 124. Special Problems in Dairying B (2-4)—First and second semesters. Prerequisites, Dairy 1, 108, 109. Credit in accordance with the amount and character of work done.

Special problems will be assigned which relate specifically to the work the student is pursuing. (Warren.)

For Graduates in Dairy Husbandry and Dairy Products Technology

Dairy 201. Advanced Dairy Production (3)—First semester. Prerequisite, Dairy 101 or equivalent.

A study of the newer discoveries in animal nutrition, breeding, and management. Readings and assignments. (Cairns.)

Dairy 202. Advanced Dairy Technology (3)—First semester. Prerequisite, Dairy 108, 114 or equivalent.

Milk and milk products from physico-chemical and bio-chemical points of view, with attention directed to hydrogen ion concentration, electrometric titration, oxidation-reduction, electrometric conductivity, buffer system of milk, milk enzymes. (—————.)

Dairy 204. Methods of Dairy Research (1-5)—First and second semesters. Prerequisite, permission of Professor in charge of work. Credit in accordance with the amount and character of work done.

Methods of conducting dairy research and the presentation of results are stressed. A research problem which relates specifically to the work the student is pursuing will be assigned. (Staff.)

Dairy 205. Seminar (1, 1)—First and second semesters.

Assigned readings on current literature on timely topics; preparation and presentation of reports for classroom discussion. (Staff.)

Dairy 208. Research (3-8)—First and second semesters. Credit to be determined by the amount and quality of work done.

Original investigation by the student of some subject assigned by the Major Professor, the completion of the assignment and the preparation of a thesis in accordance with requirements for an advanced degree. (Staff.)

ENTOMOLOGY

Professor Cory; Lecturers Shepard, Snodgrass, Munson; Assistant Professors Abrams, Haviland, Vogt.

Ent. 1. Introductory Entomology (3)—First and second semester. Two lectures and one laboratory period a week. Prerequisite, one semester of college Zoology.

The position of insects in the animal kingdom, their gross structure, classification into orders and principal families and the general economic status of insects. A collection of common insects is required. Fee, \$3.00.

Ent. 2. Insect Morphology (3)—First semester. One lecture and two laboratory periods a week. Prerequisite, Ent. 1.

Intensive study of the external structures and less intensive study of the internal anatomy of representative insects with special reference to those phases needed for work in insect taxonomy and biology. Fee, \$3.00.

Ent. 3. Insect Taxonomy (3)—Second semester. One lecture and two laboratory periods a week. Prerequisite, Ent. 2.

Intensive study of the classification of all orders and the important families based on individual collections supplemented by typical material from the department collection. Fee, \$3.00.

Ent. 4. Beekeeping (2)—First semester.

A study of the life history, behavior and seasonal activities of the honey-bee, its place in pollination of flowers with emphasis on plants of economic importance and bee lore in literature.

For Advanced Undergraduates and Graduates

Ent. 100. Advanced Apiculture (3)—Second semester. One lecture and two three-hour laboratory periods a week. Prerequisite, Ent. 4.

The theory and practice of apiary management. Designed for the student who wishes to keep bees or requires a practical knowledge of bee management. Fee, \$3.00. (Abrams.)

Ent. 101. Economic Entomology (3)—(Not offered in 1949-1950). (Cory.)

Ent. 103-104. Insect Pests (3, 3)—First and second semesters. Two lectures and one three-hour laboratory period a week. Prerequisite, Ent. 1 or consent of the department.

A comprehensive study of the principal pests of crops, livestock, the household, man and forests. Fee, \$3.00. (Cory.)

Ent. 105. Medical Entomology (3)—First semester. Two lectures and one three-hour laboratory period a week. Prerequisite, Ent. 1 or consent of the department.

The relation of the Arthropoda to disease of man, both directly and as vectors of pathogenic organisms. The fundamentals of parasitology and sanitation as they are related to entomology. The control of pests of man. Fee. \$3.00. (Vogt.)

Ent. 106. Advanced Insect Taxonomy (3)—First semester. Two three-hour laboratory periods a week. Prerequisite, Ent. 3.

Principles of nomenclature and intensive study of limited groups of insects. Fee, \$3.00. (Vogt.)

Ent. 107. Insecticides (2)—Second semester. Prerequisite, Ent. 1 and Elementary Organic Chemistry.

The development and use of contact and stomach poisons, fumigants and other important chemicals, with reference to their chemistry, toxic action, compatibility, and host injury. Recent research emphasized. (Shepard.)

Ent. 109. Insect Physiology (2)—Second semester. Two lectures and occasional demonstrations. Prerequisite, consent of the department.

The functioning of the insect body with particular reference to blood, circulation, digestion, absorption, excretion, respiration, reflex action and the nervous system, and metabolism. (Munson.)

Ent. 110, 111. Special Problems (1, 1)—First and second semesters. Prerequisites, to be determined by the department.

An intensive investigation of some entomological problem, preferably of the student's choice. Required of majors in entomology. (Cory.)

Ent. 112. Seminar (1, 1)—First and second semesters. Prerequisite, senior standing.

Presentation of original work, review and abstracts of literature. (Cory.)

Ent. 114. Insect Pests of Greenhouses (3)—Second semester. Two lectures and one three-hour laboratory period a week. Prerequisite, Ent. 1 or consent of the department.

The identification, life history and habits of insects affecting plants raised under glass; recognition of early injury and methods of control applicable under these specialized conditions will be considered. Fee, \$3.00.

(Haviland.)

For Graduates

Ent. 201. Advanced Entomology—Credit and prerequisites to be determined by the department. First and second semesters.

Studies of minor problems in morphology, taxonomy and applied entomology, with particular reference to the preparation of the student for individual research. (Cory.)

Ent. 202. Research—First and second semesters.

Required of graduate students majoring in Entomology. This course involves research on an approved project. A dissertation suitable for publication must be submitted at the conclusion of the studies as a part of the requirements for an advanced degree. (Cory.)

Ent. 203. Advanced Insect Morphology (2-4)—First semester. Two lectures, additional laboratory work and credit by special arrangement with the department.

Insect anatomy with special reference to function. Given in preparation for advanced work in physiology or research in morphology. (Snodgrass.)

Ent. 205. Insect Ecology (2)—Second semester. One lecture and one three-hour laboratory period a week. Prerequisite, consent of the department.

A study of fundamental factors involved in the relationship of insects to their environment. Emphasis is placed on the insect as a dynamic organism adjusted to its surroundings. (Vogt.)

FORESTRY

Associate Professor Dengler

For. 1. Introduction to Forestry (2)—Second Semester. Prerequisite, Bot. 1.

A general survey of the field of forestry, including woodland values, conservation, protection, reproduction, management, utilization, mensuration, engineering, recreation, lumbering, and forest wildlife management.

HORTICULTURE

Professors Haut, Link, Schrader, Scott, Walls; Associate Professors Cornell, Shanks, Shoemaker; Assistant Professor Stark

Hort. 1. General Horticulture (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, Bot. 1.

A general basic course planned to give the student a background of methods and practices used in production of horticultural crops.

Hort. 5, 6. Fruit Production (3, 2)—First and second semesters. One or two lectures and one laboratory period a week. Prerequisite, Bot. 1.

A study of commercial varieties and the harvesting, grading, and storage of fruits. Principles and practices in fruit tree production.

Hort. 11. Greenhouse Management (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, Bot. 1.

A detailed study of greenhouse construction and management.

Hort. 16. Garden Flowers (3)—Second semester. Two lectures and one laboratory period a week.

The various species of annuals, herbaceous perennials, bulbs, bedding plants, and roses and their cultural requirements.

Hort. 22. Landscape Gardening (2)—First semester.

The theory and general principles of landscape gardening and their application to private and public areas.

Hort. 56. Landscape Ornamentals and Floriculture (3)—Second semester. Two lectures and one laboratory period a week.

A course dealing with the basic principles in the use of trees, shrubs, broad-leaved evergreens, annual and perennial flowering plants in ornamental plantings. Designed for any students wishing a broad coverage in this field.

Hort. 58. Vegetable Production (3)—Second semester. Two lectures and one laboratory period a week. Prerequisites, Bot. 1 and Soils 1.

A study of the principles and practices of commercial vegetable production.

Hort. 59. Small Fruits (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, Bot. 1.

A study of the principles and practices involved in the production of small fruits including grapes, strawberries, raspberries, blueberries, blackberries, and cranberries.

Hort. 61. Processing Industries (2).

Early history and development of the various types of preservation of horticultural crops, such as canning, freezing, dehydration, pickling or brining. The relative importance of these methods on state, national and world-wide bases are emphasized.

Hort. 62. Plant Propagation (3)—First semester. Two lectures and one laboratory period a week. Prerequisite, Bot. 1.

A study of principles and practices of propagation of horticultural plants.

Hort. 63. Flower Store Management (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, Hort. 11.

A study of the operation and management of a flower store. Laboratory period devoted to principles and practice of floral arrangements and decoration.

For Advanced Undergraduates and Graduates

Hort. 101, 102. Technology of Fruits (2, 2)—First and second semesters. Prerequisite, Hort. 6 and Bot. 101.

A critical analysis of research work and application of the principles of plant physiology, chemistry, and botany to practical problems in commercial production. (Haut.)

Hort. 103, 104. Technology of Vegetables (2, 2)—First and second semesters. Prerequisite, Hort. 58 and Bot. 101.

For a description of these courses see the general statement under Hort. 101, 102. (Stark.)

Hort. 105. Technology of Ornamentals (2)—First or second semester. Prerequisites, Bot. 101 and Hort. 107.

A study of the physiological plant processes as related to the growth, flowering, and storage of floricultural and ornamental plants. (Link.)

Hort. 106. World Fruits and Nuts (2)—Second semester. Prerequisite, Bot. 1.

A study of the tropical and subtropical fruits and nuts of economic importance. (Haut.)

Hort. 107, 108. Plant Materials (3, 3)—First and second semesters. Prerequisites, Bot. 1, Bot. 11.

A field and laboratory study of trees, shrubs, and vines used in ornamental plantings. (Cornell.)

Hort. 114. Systematic Pomology (3)—First semester. Two lectures and one laboratory period a week. Prerequisite, Hort. 5, 6.

A study of the origin, history, taxonomic relationships, and description of fruits. (Haut.)

Hort. 116. Systematic Olericulture (3)—First semester. Two lectures and one laboratory period a week. Prerequisite, Hort. 58.

A study of the classification and nomenclature of vegetable crops. (Walls.)

Hort. 118, 119. Seminar (1, 1)—First and second semesters.

Oral presentation of the results of investigational work by reviewing recent scientific literature in the various phases of horticulture. (Staff.)

Hort. 121. Plant Operations (2)—First semester. One lecture and one laboratory period a week. Prerequisites, Agr. Engr. 111, 112.

Course deals with arrangement of machinery and equipment in proper sequence to insure the most economical operation of commercial processing plants, providing for continuous flow through the factory. Field trips to commercial plants included. (Walls.)

Hort. 122. Special Problems (2, 2)—First and second semesters. Credit arranged according to work done. For major students in horticulture or botany. (Staff.)

Hort. 123. Grading and Judging of Canned and Frozen Products (2)—First semester. One lecture and one laboratory period a week. Prerequisites, Hort. 58, 155, 156.

Factors considered in grading. Actual grading of principal products and critical appraisal for quality improvement.

Hort. 124. Quality Control (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, Hort. 123.

This course covers the control of quality in canned and frozen vegetables and fruits, dealing with proper harvesting, grading of raw products and various phases of preparation and handling, as well as the evaluation of varieties.

Hort. 126. Nutritional Analyses of Processed Crops (3)—Second semester. One lecture and two laboratory periods a week. Prerequisites, Chem. 33 and 34, Bot. 101, Hort. 112.

A study and laboratory practice of standard methods for determining mineral, vitamin, carbohydrate, protein and other food values of various fruit and vegetable products.

Hort. 150, 151. Commercial Floriculture (3, 3)—First and second semesters. Two lectures and one laboratory period a week. Prerequisites, Bot. 1, Hort. 11.

Growing and handling bench crops and potted plants, and the marketing of cut flowers. (Link.)

Hort. 152. Landscape Design (3)—First semester. One lecture and two laboratory periods a week. Prerequisites, Hort. 22, Eng. D. 1, 2, Art 2, Surv. 1H.

A consideration of the principles of landscape design supplemented by direct application in the drafting room. (Shoemaker.)

Hort. 153. Landscape Design (3)—Second semester. Three laboratory periods a week. Prerequisite, Hort. 152.

Advanced landscape design. (Shoemaker.)

Hort. 155. Commercial Processing I (3)—First semester. Two lectures and one laboratory period a week. Prerequisites, Chem. 32, 34.

The fundamentals of canning, freezing, and dehydration of horticultural crops. (Walls.)

Hort. 156. Commercial Processing II (2)—One lecture and one laboratory period a week. Prerequisite, Hort. 155.

A continuation of Commercial Processing I. Also includes actual work in laboratory of manufacture of jams, jellies, conserves, preserves, marmalades, and juices. (Walls.)

Hort. 159. Nursery Management (3)—Second semester. Two lectures and one laboratory period a week. Prerequisites or concurrently, Hort. 62, 107, 108.

A study of all phases of commercial nursery management and operations.

Hort. 160. Landscape Maintenance (3)—Second semester. Two lectures and one laboratory period a week. Prerequisites or concurrently, Hort. 107, 108.

A study of the planting and maintenance of turf, ornamental shrubs and trees. Basic principles of park and estate maintenance included.

For Graduates

Hort. 201, 202. Experimental Pomology (3, 3)—First and second semesters. Prerequisite, Bot. 101.

A systematic review of scientific knowledge and practical observations as applied to commercial practices in pomology. (Schrader.)

Hort. 203, 204. Experimental Olericulture (2, 2)—First and second semesters. Prerequisite, Bot. 101.

A systematic review of scientific knowledge and practical observations as applied to commercial practices in olericulture. (———.)

Hort. 205. Experimental Pomology (3)—Second semester.

This course is a continuation of Hort. 201, 202. (Schrader.)

Hort. 206. Horticultural Cyto-genetics (3)—Second semester. Prerequisites, Zool. 104, Bot. 101, Bot. 201, or equivalents.

A course dealing with the field of cyto-genetics in relation to horticulture. (———.)

Hort. 207. Methods of Horticultural Research (3)—Second semester. One lecture and one four-hour laboratory period a week.

A critical study of research methods which are or may be used in horticulture. (Scott and Staff.)

Hort. 208. Advanced Horticultural Research (2 to 12)—First and second semesters. Credit granted according to work done. (Staff.)

Hort. 209. Advanced Seminar (1, 1)—First and second semesters. Five credit hours for five semesters can be obtained.

Oral reports with illustrative material are required on special topics or recent research publications in horticulture. (Haut and Staff.)

POULTRY HUSBANDRY

Professors Jull, Gwin, Shaffner, Combs; Associate Professor Quigley.

P. H. 1. Poultry Production (3)—First semester. Two lectures and one laboratory period a week.

This is a general comprehensive course covering all phases of modern poultry husbandry practices, including breeds, incubation, brooding, housing, feeding, culling, marketing, caponizing, and the economics of production and distribution of poultry products.

P. H. 2. Poultry Biology (2)—Second semester.

This course is designed to provide basic information as a foundation for other courses in poultry. The biology of the fowl is considered with respect to fundamentals of cell development, the development and structure of the digestive, circulatory, respiratory, reproductive and endocrine systems, feathers, growth, and related problems.

P. H. 59. Advanced Poultry Judging (1)—First semester. Prerequisite, P. H. 1. One lecture or laboratory period per week.

Theory and practice of judging and culling by physical means. Correlation studies of characteristics associated with productivity.

Contestant for regional collegiate judging competitions will be selected from this class.

For Advanced Undergraduates and Graduates

P. H. 100. Poultry Breeding (2)—Second semester. Prerequisites, P. H. 1 or 2. Not for graduate credit.

The inheritance of morphological and physiological characters of poultry are presented. Inheritance of factors related to egg and meat production and quality are stressed. Breeding plans are discussed. (Jull.)

P. H. 101. Poultry Nutrition (3)—First semester. Two lectures and one laboratory period a week. Not for graduate credit.

Nutritive requirements of poultry and the nutrients which meet those requirements are presented. Studies are made of various nutritional diseases commonly encountered under practical conditions. (Combs.)

P. H. 102. Physiology of Hatchability (3)—Second semester. Two lectures and one laboratory period a week. Not for graduate credit.

The physiology of embryonic development as related to principles of hatchability, and problems of incubation encountered in the hatchery industry are discussed. Laboratory exercises stressing fundamentals of hatchability are assigned. (Shaffner.)

P. H. 103. Commercial Poultry Management (2)—Second semester. Prerequisite, ten hours of poultry husbandry, including P. H. 1. Not for graduate credit.

A symposium on finance, investment, plant layout, specialization, purchase of supplies, and management problems in baby chick, egg, broiler, and turkey production; foremanship, advertising, selling, by-products, production and financial records. Field trips required. (Quigley.)

P. H. 104. Poultry Marketing Problems (3)—First semester. Two lectures and one laboratory period a week.

Live and dressed poultry grades, poultry marketing channels, relation of transportation and distribution to quality, methods and costs of marketing live and dressed poultry, dressing, drawing, eviscerating and preparing poultry for the table. (Gwin.)

P. H. 105. Egg Marketing Problems (3)—Second semester. Two lectures and one laboratory period a week.

Exterior and interior egg quality factors, wholesale and retail grades of eggs, egg marketing channels, relation of transportation and distribution to quality, methods and costs of marketing eggs, candling and preparing eggs for the table. (Gwin.)

Poultry Hygiene, see Veterinary Science, V. S. 107.

Avian Anatomy, see Veterinary Science, V. S. 108.

Preservation of Poultry Products, see F. Tech. 108.

P. H. 107. Poultry Industrial and Economic Problems (2)—First semester.

Relation of poultry to agriculture as a whole and its economic importance. Consumer prejudices and preferences, production, transportation, storage, and distribution problems are discussed. Trends in the industry, surpluses and their utilization, poultry by-products, and disease problems, are presented. Federal, state, and private agencies servicing the poultry industry and function performed by each agency are discussed. (Staff.)

P. H. 108. Special Poultry Problems (1-2)—First and second semesters.

For senior poultry students. The student will be assigned special problems in the field of poultry for individual study and report. (Staff.)

For Graduates

P. H. 201. Advanced Poultry Genetics (3)—First semester. Prerequisite, P. H. 100 or equivalent.

This course serves as a foundation for research in poultry genetics. Linkage, crossing-over, inheritance of sex, the expression of genes in development, inheritance of resistance to disease, and the influence of the environment on the expression of genetic capacities are considered. (Jull.)

P. H. 202. Advanced Poultry Nutrition (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, P. H. 101 or equivalent.

A fundamental study of the dietary role of proteins, minerals, vitamins, and carbohydrates is given as well as a study of the digestion and metabolism of these substances. Deficiency diseases as produced by the use of synthetic diets are considered. (Combs.)

P. H. 203. Physiology of Reproduction of Poultry (3)—First semester. Two lectures and one laboratory period a week. Prerequisite, P. H. 102 or its equivalent.

The role of the endocrines in reproduction, especially with respect to egg production, is considered. Fertility, sexual maturity, broodiness, molting, egg formation, ovulation, deposition of egg envelopes, and the physiology of oviposition are studied. (Shaffner.)

P. H. 204. Poultry Seminar (1)—First and second semesters.

Oral reports of current researches by staff members, graduate students, and guest speakers are presented. (Staff.)

P. H. 205. Poultry Literature (1-4)—First and second semesters.

Readings on individual topics are assigned. Written reports required. Methods of analysis and presentation of scientific material are discussed. (Staff.)

P. H. 206. Poultry Research—First and second semesters. Credit in accordance with work done.

Practical and fundamental research with poultry may be conducted under the supervision of staff members toward the requirements for the degrees of M.S. and Ph.D. (Staff.)

P. H. 207. Poultry Research Techniques (2)—First semester. One lecture and one laboratory period a week.

To acquaint graduate students with common basic research techniques useful in conducting experiments with poultry or poultry products. Methods of arranging and conducting an experiment, of interpreting results (including the use of statistics), of writing and publishing experimental results, of using laboratory equipment (pH meter, colorimeter, microscope, etc.), of purchasing equipment, and of using scientific periodicals are considered. Actual laboratory experiments with poultry are included. (Staff.)

VETERINARY SCIENCE

Professors Brueckner and DeVolt; Associate Professors Coffin and Reagan

For Advanced Undergraduates and Graduates

V. S. 101. Comparative Anatomy (3)—First semester. Two lectures and one laboratory period.

Normal structure of the domesticated animals; normal physiological activities; interrelationship of structure and function. (Coffin.)

V. S. 102. Animal Hygiene (3)—Second semester. Two lectures and one laboratory period. Prerequisite, V. S. 101 or permission of instructor.

Nature of disease; immunity; prevention, and control; common diseases of farm animals. (Coffin.)

V. S. 103. Regional Comparative Anatomy (2)—First and second semesters. One lecture and one laboratory period.

Structure and function of the foot of domestic species. Common diseases and abnormalities of the foot; their correction and prevention. (Coffin.)

V. S. 104. Advanced Regional Comparative Anatomy (2)—Second semester. Two laboratory periods. Prerequisite, V. S. 103.

Advanced studies of the anatomy, physiology of the foot of domestic animals. Advanced and detailed studies of abnormalities and diseases of the feet. Their prevention and correction. (Coffin.)

V. S. 108. Avian Anatomy (3)—First semester. Two lectures and one laboratory. Prerequisite, Zool. 1 s.

Gross and microscopic structure; physiological processes; dissection and demonstration. (DeVolt.)

V. S. 107. Poultry Hygiene (3)—Second semester. Two lectures and one laboratory. Prerequisite, Bact. 1; P. H. 1. (DeVolt.)

For Graduates

V. S. 201. Animal Disease Problems (2-6)—First and second semesters. Credit depending upon work done. Prerequisite, Veterinary degree or consent of Staff.

Laboratory and field work by assignment. (Staff.)

V. S. 202. Animal Disease Research (2-6)—First and second semesters. Credit depends on work done. Prerequisite, Veterinary degree or consent of Staff.

Studies of practical disease phases. (Staff.)

V. S. 203. Electron Microscopy (2)—Second semester. One lecture and one laboratory period a week. Prerequisite, veterinary degree or one year of graduate study.

Theory of the electron microscope, preparation of specimens, manipulations and photography. (Reagan, Brueckner.)

AGRICULTURAL, EXTENSION, RESEARCH AND REGULATORY AGENCIES

EXTENSION SERVICE

Administrative Staff

College Park

THOMAS BADDELEY SYMONS, M.S., D.Agr., Dean, College of Agriculture, Director.

ROGER B. CORBETT, Ph.D., Associate Dean and Associate Director, Administration.

VENIA MERIE KELLAR, B.S., Professor, Assistant Director.

ERNEST NEAL CORY, Ph.D., Professor and Head, Entomology, State Entomologist, Assistant Director.

PAUL EDWIN NYSTROM, M.S., Professor, Deputy Director.

JOHN W. MAGRUDER, M.S., Professor and County Agent Leader.

ARTHUR E. DURFEE, B.S., Professor and Extension Editor.

DOROTHY EMERSON, Professor, Girls' Club Leader.

MYLO SNAVELY DOWNEY, M.A., Professor, Boys' Club Leader.

FLORENCE HARRIETT MASON, B.S., Professor, Home Furnishing, District Agent.

ELLIOTT M. ELLIOTT, Administrative Assistant.

Cooperative Extension work in agriculture and home economics, established by State and Federal Laws in 1914, is designed to assist farmers and their families in the problems of agriculture and rural homes. Most of the work is carried on in the local communities, on the farms and in the homes throughout the State. It is conducted under a Memorandum of Understanding between the Extension Service of the University of Maryland and the U. S. Department of Agriculture.

The Federal Government, the State, and the Counties contribute to the support of the Extension Service in Maryland. There is a County Extension Service in each county, with a County Agricultural Agent and Home Demonstration Agent in charge, and assistants where funds permit and the work requires. Backed by a staff of Specialists at the University, these Agents are in close contact with rural people and their problems.

Practically every phase of agriculture and rural home life comes within the scope of Extension work. The Extension Service teaches largely by demonstrations and carries the scientific and economic results of the Experiment Station and Department of Agriculture to rural people in ways that they understand and use.

In Maryland, the Extension Service works in close association with all rural groups and organizations. It assists especially in promoting better marketing of farm products and encourages the marketing of home supplies by rural

women. Work with rural women is one of the most extensive phases of extension education, including both the practical problems of the home and the cultural, economic, and community activities in which present-day women are engaging.

In addition to work with adults, thousands of boys and girls are developed as leaders and given practical education in 4-H Clubs. Through their diversified activities, the boys and girls are given a valuable type of instruction and training, and are afforded an opportunity to develop self-confidence, perseverance and citizenship.

Extension Short Courses

The Extension Service arranges and conducts short courses in various lines, most of which are held at the University. Some of these courses have been held regularly over a period of years and others are added as the need and demand develop.

Canners' Short Course

For many years a short course has been held each year to aid canners in keeping abreast of the latest developments in their industry. It is usually held in February.

Rural Women's Short Course

In response to requests of rural women for special training in a variety of subjects, the Rural Women's Short Course was inaugurated in 1922. Attendance at the course, extending for one week, has grown steadily, reaching more than one thousand women at recent sessions. The program offered has been broadened through the years and attracts women from all counties in the State. The third week in June is the date usually selected.

Other Short Courses

Courses for nurserymen, florists, poultry flock selection agents, and cow testers are among those held in recent years. Announcement of such courses is made to those who may be interested.

Boys' and Girls' Club Week

Members and leaders of boys' and girls' 4-H Clubs come to the University for a week each year, usually in August. Class work and demonstrations are given by specialists, and a broad program of education, inspiration and recreation is provided.

EXTENSION SERVICE STAFF*

Subject Matter Specialists

GEORGE JENVEY ABRAMS, M.S., Assistant Professor, Apiculture.
CLEMENTINE B. ANSLINGER, A.B., Assistant, Marketing.

* Many of the members of the Extension Service staff are also on the Instructional staff, or the Experiment Station staff, or both. Lists of the staffs of these two agencies appear elsewhere in this publication.

- GEORGE HAROLD AXINN, B.S., Assistant Professor, Bulletin Editor.
RONALD BAMFORD, Ph.D., Professor and Head, Botany and Plant Pathology.
GEORGE MAX BEAL, Ph. D., Professor Agricultural Economics and Marketing.
WALTER CROTHERS BEAVEN, Ph.D., Professor, Marketing Inspection.
EDWARD KRUG BENDER, B.S., Assistant Professor Vegetable Crops.
THEODORE L. BISSELL, M.S., Associate Professor, Extension Entomology.
ROBERT D. BOYCE, B.S., Instructor, Agronomy.
ROWLAND C. BRANDENBURG, B.S., Assistant in Entomology.
RUSSELL GUY BROWN, Ph.D., Associate Professor of Botany.
JOHN BURIC, B.S., Instructor, Animal Husbandry.
GEORGE JOHN BURKHARDT, M.S., Associate Professor, Agricultural Engineering.
GORDON MANN CAIRNS, Ph.D., Professor and Head, Dairy Husbandry.
ROBERT PEARY CALLAWAY, M.S., Professor, Marketing.
RAY WILFORD CARPENTER, A.B., LL.B., Professor and Head, Agricultural Engineering, State Drainage Engineer.
GERALD F. COMBS, Ph.D., Professor, Poultry.
PARDON W. CORNELL, M.S., Associate Professor, Horticulture.
CARROLL EASTBURN COX, Ph.D., Assistant Professor, Plant Pathology.
HARRY WILLIAM DENGLER, B.S., Associate Professor, Forestry.
SAMUEL HENRY DeVAULT, Ph.D., Professor and Head, Agricultural Economics and Marketing.
RANDOLPH HENRY DUFF, Instructor and Assistant in Visual Instruction.
CHARLES OLIVER DUNBAR, B.S., Associate Professor, Horticulture.
RUDOLPH SAMPSON FORRESTER, Assistant Professor, Marketing.
JAMES R. FOSTER, M.S., Instructor, Entomology.
JOHN ERWIN FOSTER, Ph.D., Professor and Head, Animal Husbandry.
GUY WATSON GIENGER, M.S., Associate Professor, Agricultural Engineering.
ENGEL LEE RUSSELL GILBERT, B.S., Assistant Professor, Entomology.
CASTILLO GRAHAM, Ph.D., Associate Professor, Field Entomologist.
JAMES MARTIN GWIN, M.S., Professor, Poultry Marketing.
ARTHUR BRYAN HAMILTON, M.S., Associate Professor, Agricultural Economics and Farm Management.
IRVIN CHARLES HAUT, Ph.D., Professor and Head, Horticulture.
RUSSELL CHENEY HAWES, M.S., Professor, Marketing.
WILLIAM E. HEIFNER, Assistant Professor, Marketing.
HAROLD HOECKER, B.S., Research Assistant, Marketing.
RAYMOND WILLIAM HOECKER, Ph.D., Professor, Agricultural Economics and Marketing.
LOUIS CASPAR HOLLAND, Assistant Professor, Marketing.
MABEL G. HOWELL, B.S., Assistant, Marketing.
WALTER FULTON JEFFERS, Ph.D., Associate Professor, Plant Pathology.

- ROBERT ANDREW JEHL, Ph.D., Professor, Plant Pathology, State Pathologist.
- EBEN C. JENKINS, M.S., Assistant Professor and Extension Specialist in Distribution.
- MORLEY ALLAN JULL, Ph.D., Professor and Head, Poultry Husbandry.
- MALCOLM KERR, M.S., Associate Professor, Animal Husbandry.
- ALBERT VICTOR KREWATCH, M.S., E.E., Associate Professor, Agricultural Engineering, Rural Electrification.
- ALBIN OWINGS KUHN, Ph.D., Professor and Head, Agronomy.
- GEORGE SHEALY LANGFORD, Ph.D., Professor, Entomology.
- CONRAD B. LINK, Ph.D., Professor, Floriculture.
- MARGARET THOMPSON LOAR, B.S., Associate Professor and District Agent County Home Demonstration Work.
- JOHN EDWARD MAHONEY, B.S., Assistant Professor, Marketing.
- ARTHUR FEHL MARTIN, B.S., Assistant Professor, Marketing.
- ELLIS MARTIN, B.S., Laboratory Assistant, Agricultural Engineering.
- FLORENCE HARRIETT MASON, B.S., Professor, Home Furnishing, District Agent.
- CHARLES E. MCCAIN, Assistant Professor, Marketing.
- HAROLD SLOAN MCCONNELL, M.S., Associate Professor, Entomology.
- WILLIAM RUSSELL MCKNIGHT, B.S., Associate Professor, Egg Inspection and Marketing. County Agent at Large.
- MARGARET MCPHEETERS, M.S., Associate Professor, Nutrition.
- CHARLES PERCIVAL MERRICK, B.S., Assistant Professor, Drainage Engineering.
- JOHN E. MOORE, B.S., Instructor, Plant Pathology.
- EVA M. NORTON, B.S., Instructor and Assistant in Reports, Extension.
- JAMES BURTON OUTHOUSE, M.S., Associate Professor, Animal Husbandry.
- RALPH ALFRED PORTERFIELD, B.S., Instructor, Dairy Husbandry, Artificial Insemination.
- WALTER BENJAMIN POSEY, M.S., Professor, Tobacco.
- JOHN W. POU, M.S., Assistant Professor, Dairy.
- GEORGE DEWITTE QUIGLEY, B.S., Associate Professor, Poultry Husbandry.
- WADE HAMPTON RICE, B.S., Associate Professor, Poultry.
- EDWARD MCGEE RIDER, B.A., Assistant Professor, Information Specialist.
- MARVIN EUGENE SENCER, B.S., Instructor, Dairy Husbandry, Artificial Insemination.
- CLYNE S. SHAFFNER, Ph.D., Associate Professor, Poultry.
- JAMES B. SHANKS, Ph.D., Associate Professor, Floriculture.
- CAROLYN L. SHAVER, B.S., Instructor, 4-H and Home Economics Information Specialist.
- HELEN SHELBY, M.S., Associate Professor, Clothing.
- MARK MERCER SHOEMAKER, A.B., M.L.D., Associate Professor, Landscape Gardening.
- HELEN IRENE SMITH, M.A., Associate Professor, Home Management.
- DELBERT W. SQUIRES, M.S., Assistant Professor, Entomology.

STANLEY P. STABLER, B.S., Assistant Professor, Agronomy.
 FRANCIS C. STARK, JR., Ph.D., Assistant Professor, Vegetable Gardening.
 HOWARD LIVINGSTON STIER, Ph.D., Professor and Chief, Marketing.
 GEORGE A. STEVENS, M.S., Assistant, Agricultural Economics and Marketing.
 JOSEPH McNAUGHTON VIAL, B.S., Professor, Animal Husbandry.
 ALBERT FRANK VIERHELLER, M.S., Associate Professor, Horticulture.
 EDGAR PERKINS WALLS, Ph.D., Professor, Canning Crops.
 EDWIN JOSEPH WEATHERBY, Ph.D., Associate Professor, Artificial Insemination.
 L. C. WEAVER, Ph.D., Assistant Professor, Plant Pathology.
 BOYD T. WHITTLE, M.S., Associate Professor, Animal Husbandry.
 WALTER SHERARD WILSON, B.S., Associate Professor, Assistant Boys' Club Leader.

County Agents (Field)

<i>County</i>	<i>Name and Title</i>	<i>Headquarters</i>
Allegany	RALPH FRANK MCHENRY, B. S., Associate Professor.....	Cumberland
Anne Arundel...	STANLEY EVERETT DAY, B. S., Associate Professor.....	Annapolis
Baltimore	HORACE BENNETT DERRICK, B.S., Associate Professor.....	Towson
Calvert	ROBERT M. HALL, A.B. Associate Professor.....	Prince Frederick
Caroline	FRANCIS MARION ROGERS, B.S., Associate Professor	Denton
Carroll	LONDON CRAWFORD BURNS, B.S., Associated Professor	Westminster
Cecil	RICHARD SPENCER SUTTON, B.A., Associate Professor.....	Elkton
Charles	PAUL DENNIS BROWN, B.S., Associate Professor.....	La Plata
Dorchester	HARRY WESLEY BEGGS, B.S., Associate Professor.....	Cambridge
Frederick	HENRY REESE SHOEMAKER, M.A., Associate Professor.....	Frederick
Garrett	JOHN HURLEY CARTER, B.S., Associate Professor	Oakland
Harford	HENRY MORRISON CARROLL, B.S., Associate Professor.....	Bel Air

Howard	WARREN GRAHAM MYERS, B.S., Associate Professor.....	Ellicott City
Kent	JAMES DUNHAM McVEAN, B.S., Associate Professor.....	Chestertown
Montgomery	OTTO WATSON ANDERSON, M.S., Associate Professor.....	Rockville
Prince Georges..	PERCY ELLSWORTH CLARK, B.S., Associate Professor.....	Upper Marlboro
Queen Annes....	JAMES WALTER EBY, B.S., Associate Professor.....	Centreville
St. Marys.....	JOSEPH JULIUS JOHNSON, Associate Professor.....	Leonardtwn
Somerset	CLARENCE ZEIGLER KELLER, B.S., Associate Professor.....	Princess Anne
Talbot	RUDOLPH STOCKDALE BROWN, B.S., Associate Professor.....	Easton
Washington	MARK KERMIT MILLER, B.S., Associate Professor.....	Hagerstown
Wicomico	JAMES PAUL BROWN, B.S., Associate Professor.....	Salisbury
Worcester	ROBERT THORNTON GRANT, B.S., Associate Professor.....	Snow Hill

Assistant County Agents

Allegany	JOSEPH MATTHEW STEGER, B.S., Instructor..	Cumberland
Anne Arundel and Calvert..	W. B. VANDERFORD, B.S., Instructor.....	Annapolis
Baltimore	FRANK R. MCFARLAND, JR., B.S., Instructor.....	Towson
Carroll	J. R. SCHABINGER, M.A., Instructor.....	Westminster
Cecil	M. GIST WELLING, B.S., Instructor.....	Elkton
Dorchester and Talbot	CHARLES W. CRAWFORD, Instructor.....	Cambridge
Frederick	HUGH BRADLEY JONES, B.S., Instructor.....	Frederick
Harford	ROBERT K. BECHTOLD, B.S., Instructor.....	Bel Air
Howard	BEATRICE STREAKER CISSEL, B.S., Instructor.	Ellicott City
Kent	STANLEY BURR SUTTON, Instructor.....	Chestertown
Montgomery	ROSCOE NEWTON WHIPP, B.S., Instructor.....	Rockville

Prince Georges..	FRANCIS ALEXANDER GRAY, JR., B.S., Instructor.....	Upper Marlboro
Washington	RAYMOND GEORGE MUELLER, B.S., Instructor.	Hagerstown
Wicomico	JAMES AUDREY DUNCAN, B.S., Instructor.....	Salisbury

Local Agents—Negro Work

Southern Mary- land	MARTIN GREEN BAILEY, B.S., Instructor, District Agent.....	Seat Pleasant
Eastern Shore...	LOUIS HENDERSON MARTIN, Instructor....	Princess Anne
Charles	MILBOURNE HULL, B.S., Instructor.....	Bryan's Road
Prince Georges..	JAMES RUFUS TAYLOR, B.S., Instructor	Upper Marlboro

Assistant Local Agents—Negro Work

Montgomery	WILLIAM ROGER BROGDEN, Instructor.....	Spencerville
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County Home Demonstration Agents (Field)

Allegany	MAUDE ALBERTA BEAN, Associate Professor.....	Cumberland
Anne Arundel...	MIRIAM FRANCES PARMENTER, B.S., Associate Professor	Annapolis
Baltimore	ANNA TRENTAM, B.S., Associate Professor....	Towson
Baltimore City..	MARGARET O. HOLLOWAY, B.S., Associate Professor.....	Baltimore
Calvert	MRS. FLORENCE ELIZABETH BUCHANAN, B.S., Associate Professor.....	Prince Frederick
Caroline	BESSIE MARGUERITE SPAFFORD, B.S., Associate Professor	Denton
Carroll	EVELYN DAVIS SCOTT, B.S., Associate Professor.....	Westminster
Dorchester	HATTIE E. BROOKS, Associate Professor	Cambridge
Frederick	LOA ELIZABETH DAVIS, M.A., Associate Professor	Frederick
Garrett	ELEANOR K. DEARBORN, B.S., Associate Professor	Oakland
Harford	ALGA DOROTHY WEAVER, M.S., Associate Professor.....	Bel Air

Kent	CLARA P. LAUSTERER, B.S., Associate Professor.....	Chestertown
Montgomery	EDYTHE MARGARET TURNER, B.S., Associate Professor.....	Rockville
Prince Georges..	ETHEL MARY REGAN, B.S., Associate Professor.....	Hyattsville
Queen Annes....	MRS. ELLA NADEAN DAMON, B.S., Associate Professor.....	Centreville
Mt. Marys.....	ETHEL MARY JOY, A.B., Associate Professor	Leonardtwn
Somerset	HILDA TOPFER, B.S., Associate Professor.....	Princess Anne
Talbot	MARGARET SMITH, B.S., Associate Professor.....	Easton
Washington	ARDATH ELLEN MARTIN, B.S., Associate Professor.....	Hagerstown
Wicomico	NELL GRAY GRIM, M. S., Associate Professor.....	Salisbury
Worcester	ANN HILGER, B.S., Associate Professor.....	Snow Hill

Assistant County Home Demonstration Agents

Allegany	GLORIA ELIZABETH BOHN, B.S., Instructor..	Cumberland
Anne Arundel...	JOAN L. GIDDINGS, B.S., Instructor.....	Annapolis
Baltimore	ELAINE AKEHURST, B.S., Instructor.....	Towson
Carroll	DOROTHY HAINES, Instructor.....	Westminster
Frederick	MIRIAM LOUISE LEITER, B.S., Instructor.....	Frederick
Harford	DORIS P. KEPLINGER, B.S., Instructor.....	Bel Air
Montgomery	VIRGINIA LEE MCLUCKIE, B.S., Instructor.....	Rockville
Washington	MARGARET WATSON, B.S., Instructor.....	Hagerstown

Local Home Demonstration Agents—Negro Work

Charles and St. Marys.....	NAOMI TURNER, B.S., Instructor.....	Bryan's Road
Prince Georges and Mont- gomery	ETHEL LAWRENCE BIANCHI, B.S., Instructor.....	Seat Pleasant
Somerset and Wicomico.....	MRS. OMEGA MOORE JONES, A.B., Instructor	Princess Anne

THE AGRICULTURAL EXPERIMENT STATION

W. B. KEMP, *Director*

The Agricultural Experiment Station is for Maryland agriculture what the research laboratories are for large corporations. Maryland agriculture is made up of forty thousand small individual businesses, and there is not sufficient capital, or sufficient income so that any one of these can conduct research. Yet the problems which face a biological undertaking such as farming, are as numerous and perplexing as the problems of any business. Certainly our production of food would be much more costly if it were not for the research results that have been obtained by the Agricultural Experiment Station.

The station is a joint Federal and State undertaking. Passage of the Hatch Act in 1887, which made available a grant in aid to each state for the purpose of establishing an agricultural experiment station, gave a great impetus to the development of research work in agriculture. This work was further encouraged by the passage of the Adams Act in 1906, the Purnell Act in 1925, the Bankhead-Jones Act in 1935, and the Flannagan-Hope Act of 1946.

The work of the Maryland Agricultural Experiment Station which is supported by these Acts and by State appropriations centers at College Park. On the University campus are to be found laboratories for studying insects and diseases, soil fertility problems, botanical problems, and others. This is also the location of the livestock and dairy barns with their experimental herds. About eight miles from the campus at College Park, near Beltsville, the Plant Research Farm of about 500 acres is devoted to work connected with soil fertility, plant breeding and general horticultural problems. An experimental farm near Upper Marlboro is given over exclusively to the problems of tobacco growing and curing. A farm near Salisbury is devoted to solution of the problems of producers of broilers and of vegetable crops in the southern Eastern Shore area. Near Ellicott City a farm of 234 acres is devoted to livestock problems. Also tests of various crop and soil responses are distributed throughout the State. These different locations give a chance to conduct experiments under conditions which exist where the results will be put into practice.

The Station, in general exists as the "trouble-shooter" for Maryland farmers. The solution of many difficult problems in the past has given the Maryland station an excellent standing with farmers of the State.

AGRICULTURAL EXPERIMENT STATION STAFF*

WILLIAM BECK KEMP, Ph.D.....Director

Agricultural Economics and Marketing

SAMUEL HENRY DEVAULT, Ph.D.,

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ARTHUR MONTRAVILLE AHALT, M.S.....Professor, Agricultural Education

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ALBIN OWINGS KUHN, Ph.D.....Professor and Head, Agronomy

ROYLE PRICE THOMAS, Ph.D.....Professor, Soils

RUSSELL GROVE ROTHGEB, Ph.D.....Professor, Agronomy

* Many of the members of the Experiment Station staff are also on the Instructional staff, or the Extension Service Staff, or both. Lists of the staffs of these two agencies appear elsewhere in this publication.

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CONRAD LIDEN, B.S.....	Instructor, Agronomy

Agronomy—Seed Inspection

FORREST SHEPPERSON HOLMES, M.S.....	Chief Seed Inspector
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MALCOLM HENDERSON KERR, M.S.,	Associate Professor, Animal Husbandry
JOHN BURIC, B.S.,.....	Instructor, Animal Husbandry

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ROBERT EVERS SWOPE, V.M.D.....	Associate Professor
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J. OAKLEY HALL.....Assistant Inspector, Dairy Inspection

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ARTHUR E. DURFEE.....Professor and Editor

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Horticulture

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ALBERT LEE SCHRADER, Ph.D.....Professor, Pomology
EDGAR PERKINS WALLS, Ph.D.....Professor, Canning Crops
LELAND EDWARDS SCOTT, Ph.D.....Professor, Horticultural Physiology
CONRAD BARNETT LINK, Ph.D.....Professor, Horticultural Physiology
JAMES B. SHANKS, Ph.D.....Associate Professor, Floriculture
PARDON W. CORNELL, M.S...Associate Professor, Ornamental Horticulture
AMIHUD KRAMER, Ph.D.....Associate Professor, Horticulture
FRANCIS C. STARK, JR., Ph.D.....Assistant Professor, Vegetable Crops
HERMAN TODD, B.S.....Assistant in Horticulture
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Poultry

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GERALD FUSON COMBS, Ph.D.....Professor, Poultry Husbandry
CLYNE SAMUEL SHAFFNER, Ph.D.....Professor, Poultry Husbandry
GEORGE DEWITTE QUIGLEY, B.S. ..Associate Professor, Poultry Husbandry

MARYLAND STATE DEPARTMENT OF MARKETS**Agriculture Building, College Park, Maryland**

S. H. DEVAULT, Head, Department of Agricultural Economics and Marketing.

HOWARD L. STIER, Chief, Maryland State Department of Markets.

All of the activities of the State Department of Markets are geared to the importance in modern agriculture of the problems of marketing farm products. The Department endeavors to serve the every-day needs of the farmer in marketing his products and to insure a fair and equitable treatment of the farmer in all dealings which he may have concerning the marketing of his products. In the performance of these responsibilities, the Department carries out programs in extension marketing, conducts market surveys, compiles and disseminates marketing information and market data, operates a market news service, provides an agricultural inspection and grading service, maintains a consumer information service and enforces and interprets the agricultural marketing laws of the state. The regulatory aspects of the Department's functions are carried out as the agent of the State Board of Agriculture under the authority of various State laws relating to the marketing of farm products. A close working relationship is maintained with other specialists in the Extension Service, all departments of the Agricultural Experiment Station, the Maryland Crop Reporting Service, and the Production and Marketing Administration of the U. S. Department of Agriculture. The voluntary and dynamic cooperation of the personnel in these various activities brings to bear on agricultural marketing problems an effective combination of research, education, and service.

The passage of the Federal Agricultural Research and Marketing Act gave additional impetus to the study and solution of agriculture's marketing problems. The State Department of Markets is largely responsible for developing the state program under Title II of this act.

Information and assistance in all phases of marketing is available to all interested persons. When a sufficient number of individuals is interested, marketing specialists hold meetings and demonstrations in local communities. Field offices are located in Baltimore, Salisbury, Hancock, Hagerstown and Pocomoke. Department headquarters is at the University of Maryland, College Park, Maryland.

Market Price Reporting

Market reports covering more than 100 farm products are issued daily in cooperation with the U. S. Department of Agriculture whose nation-wide teletype facilities are utilized in this service. These reports contain information on market conditions and prices of crops, livestock and other agricultural products. The information in these reports is obtained from producing areas in Maryland and from terminal markets and shipping

points all over the United States. The information is published in local newspapers, broadcast over all major radio stations in the state, and mailed in mimeographed form to anyone requesting it. Eleven different market price reports are currently issued covering prices of dairy products, livestock, truck crops, poultry, grain, fresh fruits and vegetables, feed and eggs.

A weekly Retail Market Report is issued in Baltimore, which gives current retail prices for approximately 100 commodities including fruits, vegetables, meats and dairy products.

Marketing Information Service

In addition to the daily market reports, a periodic analysis of the agricultural marketing situation is prepared at the headquarters in College Park. This report contains information on market supplies, quality, price trends, storage holdings, and movement of farm products. Other periodic information available in the marketing information series includes the monthly truck crop news; the monthly poultry letter, weekly crop and weather report; truck receipts in Baltimore City of fresh fruits and vegetables, issued daily with a monthly summary; and a weekly report of the volume of broilers moved from farms to market in the Delmarva Peninsula.

Grading and Inspection Service

Any Maryland producer or handler of farm products may avail himself of the official federal-state grading service that is maintained by the department. Thoroughly trained and federally licensed inspectors are employed to perform this official grading service. Products graded and inspected include apples, peaches, tomatoes, potatoes, sweet potatoes, cannery tomatoes, cannery peas, cannery corn, dairy products, poultry and eggs and other farm products. The State Department of Markets also issues final inspection and certification for the Seed Certification Board on Irish and sweet potatoes and tomato seed stock. Maryland canners frequently base their prices to farmers on the grades established by the grading and inspection service rendered by the department. Established U. S. grades and standards are usually used in this grading program, however, special grades and standards of quality may be used if the grower or processor so desires.

Certain personnel of the department are deputized by the State Department of Health to act as its agent in preventing the sale or shipment of fruits and vegetables containing excessive spray residue. As a service to growers and handlers, members of the department will obtain samples and have chemical analyses made to determine the amount of poisonous spray residue present.

General Marketing Services

Through its Extension activities, the department endeavors to bring about a better understanding by producers, handlers and consumers regard-

ing: (1) costs of distribution; (2) important changes in market outlets and consumer demand; (3) importance of efficiently producing high-quality products; (4) advantages of standardizing and grading; (5) the place that various marketing agencies play in the marketing system and the essentials for their success; (6) interpretation and utilization of marketing information and (7) the various phases and channels of the marketing system.

Meetings are held with growers and distributors throughout the state to discuss with them their special marketing problems. The marketing specialists work with other extension personnel or research personnel in the Experiment Station in the development of a program designed to solve these problems.

The department assists in planning and conducting short courses and special schools involving various aspects of marketing such as the annual Poultry Products Marketing School, short courses for canners and freezers, grading and inspection demonstrations, etc. Another aspect of the extension marketing program of the department is the assistance given on marketing facilities such as farm markets and auctions.

Consumer Information

The Department maintains a full-time office in the city of Baltimore for the purpose of providing continuous consumer information. This service provides the consumer with information concerning best buys of perishable produce, and methods of utilizing surplus products. This service aids in the prompt movement of perishable produce at times of surplus production and market gluts. A weekly retail price report is issued as a part of this service in addition to a specially prepared radio script and press releases on best buys. This program is conducted in close cooperation with the Home Demonstration Agent of Baltimore City.

Marketing Demonstrations

In order to apply the results of marketing research, the Department conducts from time to time demonstrations of certain marketing practices which research has shown to be more efficient. These demonstrations are frequently conducted in cooperation with retail and wholesale market organizations. When the effects of certain marketing research are important and far reaching, the Department conducts demonstrations of the application immediately following the research findings.

Regulatory and Control Activities

From time to time the state has passed laws relative to the marketing of farm products which provide certain standards and controls deemed necessary for the common good of both the producer and the consumer. The department acts as the agent of the State Board of Agriculture in the enforcement of these laws which include (1) the Maryland Apple Grading Law, (2) the Maryland Fresh Egg and Egg Grading Law, (3) Poultry Sale

and Transportation Law, (4) Cantaloupe Maturity Law, (5) the Trademark Law and (6) the Grading and Inspection Laws. The department has depended upon its educational activities and the cooperation of the grower or handler for the successful enforcement of the above laws. Legal action is taken, however, when such measures fail. The greatest activity has been directed in recent years to the enforcement of the Maryland Fresh Egg and Egg Grading Law. This law was revised by the State Legislature in 1945 in order to make it more effective in creating a better demand for higher quality Maryland eggs. Principal effort has been concentrated in Baltimore City with retailers and wholesalers. Promising progress has been made during recent years.

The State Department of Markets is also authorized by law to execute, as the agent of the State Board of Agriculture, the general powers of the Board relating to the inspection and regulation of weights and measures used in the sale and purchase of agricultural products.

STATE HORTICULTURAL DEPARTMENT

College Park, Maryland

T. B. SYMONS, *Director of Extension Service.*

E. N. CORY, *Assistant Director of Extension Service, State Entomologist.*

R. A. JEHLE, *State Plant Pathologist.*

The State Horticultural Law was enacted in 1898. It provides for inspection of all nurseries and suppression of injurious insects and diseases affecting plants of all kinds. The work of the department is conducted in close association with the departments of Entomology and Plant Pathology of the University. The regulatory work is conducted under authority of the law creating the department as well as the State Board of Agriculture. For administrative purposes, the department is placed under the Extension Service of the University because of the close association of the work.

Work in this field is designed to control insects and plant diseases and to protect the public in the purchase of products of nurserymen and florists. A considerable part of the time of the staff is occupied by inspection of orchards, crops, nurseries, greenhouses, and floral establishments. Cooperation with the Federal Government in the inspection and certification of materials that come under quarantine regulations is another major function of the department. The department enforces the provisions of the Apiary Law, including inspection of apiaries. All activities pertaining to control of insects is conducted under the direction of Dr. E. N. Cory, State Entomologist and Assistant Director of Extension. Activities of the department in the field of plant disease control are under direction of Dr. R. A. Jehle, State Plant Pathologist. This service includes control and eradication of diseases of strawberries and other small fruits, diseases of apples, peaches, etc., inspection and certification of potatoes and sweet potatoes for seed, control of white pine blister rust, Dutch elm disease, etc.

DAIRY INSPECTION SERVICE

Dairy Building, College Park, Maryland

—————, *Chief Examiner*OAKLEY HALL, *Assistant Inspector*

The Maryland Dairy Inspection Law became effective June 1, 1935. However, the present activities of the Dairy Inspection Service are based on Article 43 of the Annotated Code of Maryland, Chapter 403 of the Laws of Maryland, 1941. The dairy department, functioning under the Agricultural Experiment Station of the University of Maryland, is charged with the administration of this law.

The purposes of the Dairy Inspection Law are as follows: (a) To insure producers who sell milk and cream by measure, weight and butterfat test, that samples, weights and tests used as the basis of payment for such products are correct; (b) To insure dealers who purchase milk and cream that their agents shall correctly weigh, sample, and test these products; (c) To insure correctness of tests made for official inspections or for public record. To achieve these purposes the law requires the licensing of all dealers who purchase milk and cream from producers, whether the purchases are by measure, weight, or test, and the licensing of all persons sampling, weighing and testing milk and cream when the results of such samples, weights, and tests are to serve as a basis of payment to producers.

Duties of the Dairy Inspection Service, resulting from enforcement of the Inspection Law, deal with the calibration of that glassware used in testing milk and cream and the rejection of inaccurate items; examination of all weighers, samplers, and testers and the issuance of licenses to those satisfactorily passing the examination; and inspection of the pertinent activities of weighers, samplers, testers and dairy plants.

The Dairy Inspection Law benefits the entire dairy industry by preventing unfair competition and unfair trade practices which result from improper methods of weighing, sampling and testing milk and cream, and the use of inaccurate and improper equipment. Also, requirements governing the accuracy of scales, construction of weigh tanks, and proper procedures result in greater efficiency and thus less loss to dealers and producers alike. The licensing of weighers, samplers, and testers assures both the producer and the dealer that the men engaged in such work are competent.

The Dairy Inspection Law is administered on an educational basis with the view of promoting the mutual interests of dairy producers, dealers, and manufacturers. It is the belief of the administering agency that since the producers of milk and cream and the dealers in these products both benefit by the law, they also should share in the responsibility for its enforcement. Such a responsibility involves close cooperation and harmony between all groups affected by the law.

During 1947, 113 permits were issued to dealers as follows: 9 plants in Class A (buying less than 500 pounds of milk daily); 19 in Class B (buying from 500 to 2,000 pounds of milk daily); 67 in Class C (buying from 2,000 to 40,000 pounds of milk daily); and 18 in Class D (buying more than 40,000 pounds of milk daily). In addition, 280 licenses were issued to testers and 117 licenses were issued to weighers and samplers.

STATE DEPARTMENT OF DRAINAGE

College Park, Maryland

RAY W. CARPENTER, *State Drainage Engineer.*

The State Department of Drainage was established in 1937. Its duties are to promote and encourage the drainage of agricultural lands in the State, to correlate the activities of the local drainage organizations in the State and to cooperate with State and Federal agencies in the interest of a permanent program of improved drainage.

STATE INSPECTION AND REGULATORY SERVICE

Chemistry Building, College Park, Maryland

Feeds, Fertilizers, Agricultural Liming Materials, Insecticides and Fungicides

L. E. BOPST, *State Chemist*

R. G. FUERST, *Chemist*

W. C. SUPPLEE, *Chemist*

E. C. DONALDSON, *Chemist*

A. B. HEAGY, *Chemist*

W. J. FOOTEN, *Inspector*

H. R. WALLS, *Microscopist*

R. W. NEAL, *Inspector*

R. E. BAUMGARDNER, *Chemist*

E. M. ZENTZ, *Inspector*

J. E. SCHUELER, *Chemist*

F. G. BAGGS, *Clerk*

N. S. CHAPMAN, *Chemist*

Responsibility for enforcing the State Feed, Fertilizer, Agricultural Liming Material and Agricultural Insecticide and Fungicide laws is delegated to the State Inspection and Regulatory Service. These laws are classified as correct labeling acts.

Five distinct divisions of work are necessary in carrying out the enforcement program. First is the registration of the commodities concerned under specific brand names and definite guarantees of composition and minimum quality, which information must be clearly shown on the label; second, the collection of official samples by inspectors traveling the state; third, the chemical and physical examination of these samples to substantiate the accuracy of label representation; fourth, the publication of results of these tests, and making the reports timely and available to all interested persons; and fifth, the prosecution of those parties responsible for flagrant violations.

One phase of the work is concerned with gratuitous examination of feed, fertilizer and lime samples submitted by state purchasers. Several hundred of these tests are made annually.

Activities of the department have, in recent years, been expanded to include cooperation with federal agencies. As a result the scope of the program and the organization's prestige have become nation-wide. All of this has been accomplished with but slight increase in personnel.

It has always been the policy of this department to carry on constructive scientific control work, never losing sight of the basic aim of service; service to the buyer in assuring him of value received for money spent, and service to the manufacturer in supplying requested technical advice and safeguarding him from unfair competition.

The department depends primarily upon education to further its program. However, in those rare instances when this policy is unheeded, complete backing by the courts—federal and state—can be relied upon for enforcement assistance.

SEED INSPECTION SERVICE

Horticultural Building, College Park, Maryland

F. S. HOLMES, *Inspector*

OLIVE M. KELK, *Analyst*

The Seed Inspection Service, a division of the Agricultural Experiment Station, administers the State seed law; inspects seeds sold throughout the State; collects seed samples for laboratory examination; reports the results of these examinations to the parties concerned; publishes summaries of these reports which show the relative reliability of the label information supplied by wholesale seedsmen; cleans and treats tobacco seed intended for planting in the State; makes analyses, tests, and examinations of seed samples submitted to the Laboratory; and advises seed users regarding the economic and intelligent use of seeds. The Service also cooperates with the Production and Marketing Administration of the United States Department of Agriculture in the enforcement of the Federal Seed Act in Maryland.

Two and a half million dollars worth of seeds are planted annually in Maryland. Perhaps twenty-five percent of the field seeds and ninety percent of the vegetable seeds planted in the State pass through trade channels and are thus subject to the seed law. The work of the Seed Inspection Service is not restricted to the enforcement of the seed law, however, for State citizens may submit seed samples to the Laboratory for analysis, test, or examination. Specific information regarding suitability for planting purposes of lots of seeds is thus made available to individuals without charge. The growth of this service has been steady since the establishment of the Laboratory in 1912. Few Maryland home-owners, city or country, are not directly interested in seeds for planting in flower-bed, lawn, garden, or field.

MARYLAND LIVESTOCK SANITARY SERVICE

ARTHUR L. BRUECKNER, *Director*J. WALTER HASTINGS, SR., *Assistant Director*LEO J. POELMA, *Chief of Laboratories*

The Live Stock Sanitary Service is organized under the State Board of Agriculture and is charged with the responsibility of preventing the introduction of diseases of animals and poultry from outside of the state and with control and eradication of such diseases within the state. The service is further charged with the responsibility of cooperating with the State Department of Health in the suppression of diseases of animals and poultry which affect the public health.

Control projects in bovine tuberculosis, Johne's disease, and bovine brucellosis are conducted in cooperation with the Bureau of Animal Industry of the United States Department of Agriculture. The field force of state employed veterinarians is augmented by a number of federal veterinarians in the conduct of these control programs. The control of swine brucellosis, pullorum disease in poultry, rabies, and many other disease conditions is conducted by the state without outside assistance.

Facilities for the diagnosis of a wide variety of diseases are furnished in the main laboratory at College Park and in the branch laboratories at Salisbury, Centreville, Baltimore, Frederick, and Hagerstown. Virtually every part of the state is in easy reach of these opportunities for help.

Research studies are conducted mainly at the College Park laboratory, but some field investigations are also made from branch laboratories. Some projects are partly supported by federal funds appropriated through the Maryland Agricultural Experiment Station. From these research studies come information concerning control by sanitary measures, by vaccination, and by drug treatment which saves breeders and owners vast sums.

Members of the staff give instruction in animal and poultry diseases in the University of Maryland particularly to students in agriculture. Appropriate subjects are also presented to farmers' clubs and industry groups in the state.

MARYLAND LIVESTOCK SANITARY SERVICE STAFF

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CHARLES R. DAVIS, M.S., D.V.M.,

Supervisor, Maryland Poultry Improvement Plan

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 HAROLD F. BURTON, V.M.D.....In Charge, Baltimore Laboratory
 ROBERT E. SWOPE, V.M.D.....Associate Professor, Brucellosis Research
 CORNELIA M. COTTON, Ph.D.....Cooperative Agent, Brucellosis Research
 PAUL C. BROWN, M.S., D.V.M.....Associate Professor, Mastitis Research
 REGINALD L. REAGAN.....Associate Professor of Veterinary Virology
 JOHN M. COFFIN, V.M.D.....Associate Professor of Veterinary Science
 CARL W. SMITH, D.V.M.Associate Professor of Veterinary Science
 JAMES W. CROWL, D.V.M.....Associate Professor of Veterinary Science
 CLARENCE E. GIBBS, D.V.M.....Associate Professor of Veterinary Science
 MAHLON H. TROUT, D.V.M.....Associate Professor of Veterinary Science
 CHARLES R. LOCKWOOD, D.V.M....Associate Professor of Veterinary Science
 GEORGE W. GREEN, JR., D.V.M....Associate Professor of Veterinary Science
 ROBERT E. GIBBS, V.M.D.....Associate Professor of Veterinary Science
 ROBERT B. JOHNSON, A.B....Assistant Professor of Veterinary Physiology
 RAYMOND C. WILEY, Ph.D....Associate Professor of Veterinary Toxicology



Airplane view showing changes being made in Maryland system of farming in the important program of soil conservation.

College of
ARTS and SCIENCES

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Class in Radio Production
College of Arts and Sciences



College of Arts and Sciences

COLLEGE OF ARTS AND SCIENCESLEON PERDUE SMITH, Ph.D., *Dean*

The College of Arts and Sciences is prepared to furnish the civilian students of the present and future, including the veterans, with liberal and technical training in the physical sciences, the social studies, the biological sciences, and the humanities. This form of education affords the student an opportunity to acquire a general education which will serve as a foundation for whatever profession or vocation he may choose.

Students in other colleges of the university are offered training in fundamental courses that serve as a background for their professional education. The new program in American Civilization is open to all students of the university as well as to those in Arts and Sciences.

Requirements for Admission

The requirements for admission to the College of Arts and Sciences are, in general, the same as those for admission to the other colleges and schools of the University.

For admission to the pre-medical curriculum, two years of any one foreign language are recommended. A detailed statement of the requirements for admission to the School of Medicine and the relation of these to the pre-medical curriculum may be obtained by writing the Director of Admissions.

Degrees

The degrees conferred upon students who have met the requirements prescribed in the College of Arts and Sciences are bachelor of arts and bachelor of science.

Students of this college who complete the regular courses in Humanities and Social Sciences are awarded the degree of bachelor of art.* Students who complete the requirements for the degree of bachelor of science are awarded that degree, provided the major portion of the work has been done in the field of science, and the application has the approval of the science department in which the major work has been completed.†

Students who have elected the combined program of arts and sciences and medicine may be granted the degree of bachelor of science after the completion of at least 90 semester hours credit in addition to the required work in military science, hygiene and physical education in this college and the first year of the School of Medicine, so that the quantitative requirements of 120 credits are met, and they are recommended by the Dean of the School of Medicine.

Those electing the combined five-year academic nursing curriculum, for which the degree of bachelor of science in nursing may be awarded upon

* The Departments of Economics and of Government and Politics are in the College of Business and Public Administration. The degree of Bachelor of Science is conferred on those taking a major in these departments.

† The Departments of Botany and Entomology are in the College of Agriculture.

the completion of the full course, must first take the pre-nursing curriculum in the College of Arts and Sciences *before* the nursing course in Baltimore.

Those taking the combined course in arts and law may be awarded the bachelor of arts degree after the completion of three years of the work in this college and one year of the full-time law course, or its equivalent, in the University of Maryland School of Law. The total minimum number of credits required for graduation is 120 semester hours exclusive of military science, hygiene, and physical activities.

Residence

The last thirty semester hours credit of any curriculum leading to a baccalaureate degree in the College of Arts and Sciences must be taken in residence in this University.

Students working for one of the combined degrees must earn the last 30 semester hours credit of the arts program in residence, in the College of Arts and Sciences, College Park.

A—General Requirements for Degrees

The baccalaureate degree from the College of Arts and Sciences may be conferred upon a student who has satisfied the following requirements:

1. University requirements.
2. College of Arts and Sciences requirements:

A minimum of 120 semester hours credit in academic subjects other than military science is required for a bachelor's degree. Men must acquire in addition 12 semester hours in military science, and 4 semester hours credit in physical activities. Women must acquire in addition 4 semester hours credit in hygiene and 4 semester hours credit in physical activities.

Junior Requirements

A student must acquire a minimum of 56 credits exclusive of the requirements in military science, hygiene, and physical activities with an average grade of at least C in the Freshman and Sophomore years before being permitted to begin advanced work on his major and minor.

The following minimum requirements should be fulfilled, as far as possible, before the beginning of the junior year and must be completed before graduation:

- I. English—twelve semester hours.
- II. Foreign Language—twelve semester hours in one language. Students wishing to enroll in a language they have studied in high school will be given a placement test.
- III. Social studies—twelve semester hours; Government and Politics 1, three semester hours; Sociology 1, three semester hours; History 5 and 6, six semester hours.
- IV. Speech—two to four semester hours depending upon the particular schedule.

V. Natural Science and Mathematics—twelve semester hours.

VI. Military Science for men, twelve semester hours.

VII. Hygiene, for women, four semester hours.

VIII. Physical Activities, for both men and women, four semester hours. Military science and physical activities are required throughout the freshman and sophomore years, Hygiene during the freshman year.

3. Major and minor requirements—When the requirements of the Freshman and Sophomore years have been completed each student is expected to select a major in one of the departments of an upper division, and before graduation must complete a major and a minor. The courses constituting the major and the minor must conform to the requirements of the department in which the major work is done.

Before beginning a major or minor the student must have an average of not less than C in fundamental courses in the fields chosen.

A major shall consist, in addition to the underclass departmental requirements, of 24-40 hours, of which at least 12 must be in courses numbered 100 and above.

A minor shall consist, in addition to the underclass departmental requirements, of 12 to 20 hours, of which at least 6 must be in courses numbered 100 and above. Minor courses shall be chosen with the advice of the major in consultation with the minor department to supplement the student's major work. See departmental statements for specific requirements as to majors and minors.

The average grade of the work taken in the major and minor fields must be at least C. A general average of at least C is required for graduation.

Certification of High School Teachers

If courses are properly chosen in the field of education, a prospective high school teacher can prepare for high school positions, with a major and a minor in one of the departments of this College.

Electives in Other Colleges and Schools

A limited number of courses taken in other colleges and schools of the University may be counted for credit toward a degree in the College of Arts and Sciences.

The number of credits which may be accepted from the various colleges and schools if the work materially supplements the work taken in the College of Arts and Sciences, is as follows:

College of Agriculture—20.

College of Business and Public Administration—20.

College of Education—24.

College of Engineering—20.

College of Home Economics—20.

School of Law—In the combined program the first year of law must be completed.

School of Medicine—In the combined program the first year of medicine must be completed.

School of Nursing—In the combined program the three years of nursing must be completed.

Normal Load

The normal load for students in this college is 15 semester hours credit per semester, exclusive of the required work in physical activities and military science and hygiene for women.

Juniors and seniors are not permitted to register for more than 18 hours unless they have a "B" average for the preceding semester and the approval of the Dean of the College.

Advisers

Freshmen and sophomores in this college shall consider the Dean of the College their general adviser, special advisers are provided for guidance and assistance during the registration periods.

Juniors and seniors will consider the head of their major department their adviser, and should consult him about the arrangements of their schedules of courses.

Work in the Freshman and Sophomore Years

The work of the first two years in the College of Arts and Sciences is designed to give the student a basic general education, and to prepare him for concentration in the latter part of his course.

It is the student's responsibility to develop in these earlier years such proficiency in basic subjects as may be necessary for his continuation in the field of his special interest. Personal aptitude and a general scholastic ability must also be demonstrated, if permission to pursue a major study is to be obtained.

The student should follow the curriculum for which he is believed to be best fitted. It will be noted that a core group of studies is required of all students who are candidates for a bachelor's degree. These subjects should be taken, when possible, during the Freshman and Sophomore years. There is a great deal of similarity in these outlines for the first four semesters, and a student need not consider himself attached to any particular department until the beginning of his junior year, at which time he is to select a major.

The following curriculum gives the subjects required of students in the departments of the Humanities and the Social Studies. Students wishing to major in one of the Physical or Biological Sciences will find the requirements in the curriculums listed under the respective headings, found on subsequent pages.

<i>Freshman Year</i>	<i>Semester</i>	
	<i>I</i>	<i>II</i>
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
G. & P.—American Government (or Sociology of American Life)....	3	....
Soc. 1—Sociology of American Life (or American Government).....	....	3
*Foreign Language	3	3
Mathematics or Natural Science.....	3	3
L. S. 1, 2—Library Science.....	1	1
Speech 1, 2—Public Speaking.....	2	2
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
He. 2, 4—Hygiene (Women).....	2	2
Physical Activities	1	1
Total	18-20	18-20
 <i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6—Composition and Readings in English or in World Literature	3	3
Hist. 5, 6—History of American Civilization.....	3	3
Foreign Language	3	3
Natural Science and Mathematics.....	3	3
Elective	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	18-19	18-19

I. AMERICAN CIVILIZATION

The program in American Civilization embraces required work, a combined major-minor plan for juniors and seniors, and graduate studies. (For information concerning the graduate program, see the graduate catalog).

The Committee in charge of the program represents the departments of English, History, Government and Politics, and Sociology. Members of the committee serve as official advisers to students electing to work in the field.

The principal objectives of the work for majors are cultural rather than professional; yet the work is excellent preparation for certain careers. Students are directed towards an understanding of the configuration of our civilization, and this understanding should prove valuable in (for example) business, government, journalism, the law, and teaching.

The program is intended to have generous breadth, but the danger of securing breadth without depth is offset by the requirement of an area of concentration. Studies in American civilization are supplemented by studies in source cultures and interacting cultures; however, in choosing a curriculum, students are required to concentrate in one of the four departments primarily concerned with the program. Elective courses are, with the aid of an official adviser, chosen from courses offered in the humanities, in

* A placement test is given during Registration Week for students wishing to pursue a language they have studied in high school.

the social sciences, or in education. Normally, most elective courses are in history, English, foreign languages, comparative literature, economics, sociology, political science, and philosophy; but it is possible for a student to fulfill the requirements of the program and to elect as many as thirty semester hours in such subjects as art and psychology provided that such work fits into a carefully planned program.

In his senior year, each major is required to take a conference course in which the study of American civilization is brought to a focus. During this course, the student analyses eight or ten important books which reveal fundamental patterns in American life and thought and receives incidental training in bibliographical matters, in formulating problems for special investigation, and in group discussion.

American Civilization Curriculums

A student working in American Civilization must decide upon a program which emphasizes history, literature, sociology, or government and must consult an official adviser before selecting electives. The following skeleton curriculum presents a program which would be followed by a student who elected to emphasize history. Similar programs, making appropriate substitutions, may be worked out with an adviser for students electing to emphasize literature, sociology, or government.

Emphasis History

	—Semester—	
	I	II
<i>Junior Year</i>		
American History	3	3
American Literature, or Sociology, or Government and Politics.....	3	3
European History	3	3
Electives	6	6
	<hr/>	<hr/>
Total	15	15
<i>Senior Year</i>		
American History	3	3
English History	3	3
Conference Course	3	3
Electives	6	6
	<hr/>	<hr/>
Total	15	15

II. BIOLOGICAL CURRICULUMS*

GENERAL BIOLOGICAL SCIENCES

A curriculum has been prepared for students who are interested in biology but whose interests are not centralized in any one of the biological sciences. The courses as outlined familiarize the student with the general principles and methods of each of the biological sciences.

* For statements concerning the Departments of Botany and Entomology see the Catalog of the College of Agriculture.

By the proper selection of courses during the junior and senior years, a student may concentrate his work sufficiently in any of the fields of study to be able to continue in graduate work in that field. Also by a proper selection of electives, the educational requirements of the State Department of Education for certification can be met.

This curriculum requires the completion of at least 45 credits in the biological sciences which collectively constitute a major and a minor. Of these credits at least 18 must be in courses for advanced undergraduates.

General Biological Sciences Curriculum

	—Semester—	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Zool. 1—General Zoology.....	4	....
Bot. 1—General Botany.....	....	4
Chem. 1, 3—General Chemistry.....	4	4
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
He. 2, 4—Hygiene (Women).....	2	2
Physical Activities	1	1
	—	—
Total.....	17-18	17-18
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and World Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Ent. 1—Introductory Entomology.....	3	....
Bact. 1—General Bacteriology.....	....	4
Math. 10, 11—Algebra, Trigonometry and Analytic Geometry.....	3	3
Modern Language	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
	—	—
Total.....	16-19	17-20
<i>Junior Year</i>		
Phys. 10, 11—Mechanics and Heat, Sound Optics, Magnetism and Electricity	4	4
Modern Language	3	3
Electives (Biological Sciences).....	6	6
Electives	2	2
	—	—
Total.....	15	15
<i>Senior Year</i>		
Speech 18, 19—Introductory Speech.....	1	1
Electives (Biological Sciences).....	9	9
Electives	5	5
	—	—
Total.....	15	15

BACTERIOLOGY

The Department of Bacteriology functions with three purposes in view. One of these is to provide fundamental training for those students who choose bacteriology as a major subject. Two major fields of study are provided: (1) applied bacteriology, in preparation for such positions as dairy, sanitary and agricultural bacteriologists in federal, state and commercial laboratories, and (2) medical bacteriology, or the more recently recognized specialty of medical technology in relation to hospital, public health and clinic laboratories. The second objective of the department is to provide desirable courses for those students who are majoring in closely allied departments and desire vital supplementary information. Every effort has been made to plan these courses so that they satisfy the demands of these related departments as well as the needs of those students who have chosen bacteriology as a major. The third purpose of the department is to encourage and foster original thought in the pursuit of research.

Bacteriology Curriculums

The field of bacteriology is too vast in scope to permit specialization in the early stages of undergraduate study. Accordingly, the applied curriculum outlined below includes the basic courses in bacteriology and allied fields.

The course in *Advanced General Bacteriology (Bact. 5)* is required for all bacteriology majors, and should follow *General Bacteriology (Bact. 1)*. *Bacteriology 5* is not required as a prerequisite for upper division courses for majors in other departments provided the student has been introduced to certain aspects of bacteriology, or their equivalent, pertinent to their specialty. *Bacteriology 1*, however, is required. Students desiring to minor in bacteriology are required to complete Bacteriology 1, Bacteriology 5, and seven or eight hours in courses numbered 100 or above.

The sequence of courses in the following curriculum should be pursued as closely as possible although it is realized that some deviation may be necessary. Sufficient latitude is provided in the senior year for the student to obtain several courses that are correlated with his or her particular interests.

All students planning a major in Bacteriology should consult the Head of the Department during the first year concerning his particular field of study and his choice of a minor. The minor field of study shall be chosen only from the biological or physical sciences. Chemistry, as outlined below, is the preferred minor.

Applied Bacteriology Curriculum

	Semester	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Sp. 18, 19—Introductory Speech.....	1	1
Chem. 1, 3—General Chemistry.....	4	4
Math. 10—Algebra.....	3	....
Math. 11—Trigonometry and Analytic Geometry.....	....	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities.....	1	1
Total.....	17-18	17-18
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and World Literature.....	3	3
Fr. 1, 2 or Ger. 1, 2—Elementary French or German.....	3	3
Bact. 1—General Bacteriology.....	4	....
Bact. 5—Advanced General Bacteriology.....	....	4
Chem. 31, 32, 33, 34—Elements of Organic Chemistry.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities.....	1	1
Total.....	17-20	17-20
<i>Junior Year</i>		
Fr. 6, 7 or Ger. 6, 7—Intermediate Scientific French or German.....	3	3
Physics 10, 11—Fundamentals of Physics.....	4	4
Bact. 101—Pathogenic Bacteriology.....	4	....
Bact. 53—Sanitary Bacteriology.....	....	4
Chem. 161, 162, 163, 164—Biochemistry.....	4	4
Electives.....	3	3
Total.....	18	18
<i>Senior Year</i>		
Bact. 60—Journal Club.....	1	1
Bact. 103—Serology.....	....	4
Bact. 161—Systematic Bacteriology.....	4	....
Electives.....	9	9
Total.....	14	14

Medical Technology Curriculum

This is a professional curriculum intended for those students who desire to prepare for technical work in hospital, clinical and public health laboratories. Specialization in the field of Medical Technology begins in the sophomore year and becomes more intense during the junior year. Emphasis in this curriculum is upon fundamental courses in Bacteriology, Chemistry and Zoology.

The student who follows this curriculum is encouraged to avail himself of opportunities to work in medical laboratories during the summer months. The optimum plan shall be to place the prospective technologist in a laboratory as an apprentice as soon as his training permits.

	(Semester)	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Sp. 18, 19—Introductory Speech.....	1	1
Chem. 1, 3—General Chemistry.....	4	4
Math. 10—Algebra.....	3	....
Math. 11—Trigonometry and Analytic Geometry.....	....	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities.....	1	1
Total.....	17-18	17-18
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and World Literature.....	3	3
Fr. 1, 2 or Ger. 1, 2—Elementary French or German.....	3	3
Bact. 1—General Bacteriology.....	4	....
Bact. 5—Advanced General Bacteriology.....	....	4
Chem. 31, 32, 33, 34—Elements of Organic Chemistry.....	3	3
Physics 10, 11—Fundamentals of Physics.....	4	4
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities.....	1	1
Total.....	18-21	18-21
<i>Junior Year</i>		
Fr. 6, 7 or Ger. 6, 7—Intermediate Scientific French or German.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
Bact. 101—Pathogenic Bacteriology.....	4	....
Bact. 103—Serology.....	....	4
Chem. 161, 162, 163, 164—Biochemistry.....	4	4
Zool. 1—General Zoology.....	4	....
Zool. 106—Histological Technique.....	....	3
Total.....	18	17
<i>Senior Year</i>		
Bact. 105—Clinical Methods.....	4	....
Bact. 53—Sanitary Bacteriology.....	....	4
Bact. 108—Epidemiology and Public Health.....	....	3
Bact. 133—Dairy Bacteriology.....	4	....
Zool. 14, 15—Human Anatomy and Physiology.....	4	4
Electives.....	4	4
Total.....	16	15

ZOOLOGY

The Department of Zoology offers courses which train the student for professional work in several fields: teaching in college and secondary schools, research and regulatory work in the biological bureaus of the United States Government, work in the biological departments of state and city governments and research in industrial laboratories.

Two courses of study have been established as described below. In each of these curricula the fundamental courses are included and ample opportunity is offered for the election of additional courses in the Department of Zoology or related departments so that the student may plan his training toward the particular professional work in which he is interested.

Zoology Curriculum

	—Semester—	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Zool. 2, 3—Fundamentals of Zoology.....	4	4
Chem. 1, 3—General Chemistry.....	4	4
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities	1	1
	<hr/>	<hr/>
Total.....	17-18	17-18
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and World Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Zool. 5—Comparative Vertebrate Morphology.....	4	....
Zool. 20—Vertebrate Embryology.....	....	4
Math. 10, 11—Algebra, Trigonometry and Analytic Geometry.....	3	3
Electives	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
	<hr/>	<hr/>
Total.....	17-20	17-20
<i>Junior Year</i>		
Zool. 108—Animal Histology	4	....
Zool. 106—Histological Technique .....	....	3
Zool. 104—Genetics	3	....
Zool. 121—Principles of Animal Ecology.....	....	3
Phys. 10, 11—Mechanics and Heat; Sound, Optic, Magnetism and Electricity	4	4
Modern Language	3	3
Electives	3	3
	<hr/>	<hr/>
Total.....	17	16
<i>Senior Year</i>		
Zool. 102—General Animal Physiology .....	....	4
Elective (Zoology)	4	....
Speech 18, 19—Introductory Speech.....	1	1
Modern Language	3	3
Electives	8	8
	<hr/>	<hr/>
Total	16	16

Fisheries Biology

The aquatic resources of Maryland offer an excellent opportunity for the study of Fisheries Biology and Marine Zoology. The Chesapeake Bay and its tributaries, representing many habitats, constitute an excellent laboratory for training in these fields and commercial fisheries of the state offer additional opportunity for studies in methods, management and conservation.

The following curriculum prepares the student for specialization in this field. In addition to the courses as outlined, which he will complete at College Park, he is expected to spend part of his summers in study or practical work on the Chesapeake Bay.

Fisheries Biology Curriculum

	Semester	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Zool. 2, 3—Fundamentals of Zoology.....	4	4
Chem. 1, 3—General Chemistry.....	4	4
Sp. 18, 19—Introductory Speech.....	1	1
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities.....	1	1
Total.....	18-19	18-19
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and World Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Math. 10, 11—Algebra, Trigonometry and Analytic Geometry.....	3	3
Zool. 5—Comparative Vertebrate Morphology.....	4	....
Zool. 20—Vertebrate Embryology.....	....	4
Chem. 5—Introductory Qualitative Analysis.....	3	....
Chem. 19—Quantitative Analysis.....	....	4
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities.....	1	1
Total.....	17-20	18-21
<i>Junior Year</i>		
Ger. 1, 2—Elementary German.....	3	3
Phys. 10, 11—Mechanics and Heat; Sound, Optics, Magnetism and Electricity.....	4	4
Chem. 31, 32, 33, 34—Elements or Organic Chemistry.....	4	4
Zool. 102—General Animal Physiology.....	....	4
Zool. 118—Invertebrate Morphology.....	4	....
Zool. 121—Principles of Animal Ecology.....	....	3
Electives.....	3	....
Total.....	18	18

<i>Senior Year</i>	—Semester—	
	<i>I</i>	<i>II</i>
Ger. 6, 7—Intermediate Scientific German.....	3	3
Zool. 75, 76—Journal Club	1	1
Zool. 125—Fisheries Biology	3	....
Zool 106—Histological Technique .....	....	3
Chem. 161, 162, 163, 164—Biochemistry; or.....	4	4
Chem. 181, 182, 183, 184—Elements of Physical Chemistry.....	3	3
Electives	6	6
Total	15-16	15-16

III. THE HUMANITIES

Art

Two types of majors are offered in art: Art Major A for those who take the art curriculum as a cultural subject and as preparation for a career for which art is a necessary background. Art Major B is for those who prepare themselves for creative work on a professional basis.

In both types the student begins with the basic courses, and moves to more advanced study of the theory of design and of the general principles involved in visual expression. A large amount of study takes the form of actual practice of drawing and painting. The student, in this way, gains a knowledge of the vocabulary of drawing and painting, and of the methods and procedures underlying good quality of performance.

Art Major B emphasizes the development of craftsmanship and the creative faculty. Art Major A, while including the basic studio courses, necessarily places emphasis on the general history, composition and art appreciation, with subsequent choices of special art epochs for greater detailed study.

Art History and Art Appreciation are of special interest to students majoring in English, History, Languages, Philosophy, and Music. It is suggested that they schedule Art 9, Historical Survey of Painting, as excellent supplementary study for a fuller understanding of their major. Art 100-101 is recommended for English, Languages, Philosophy, Home Economics, and Education majors. Art 10, History of American Art, is advised for majors in the American Civilization courses. Home Economics and Horticulture majors are encouraged to schedule basic art courses as a useful means of training observation and developing understanding of and proficiency in the visual arts.

English

Students majoring in English, particularly those who plan to do graduate work, are urged to take work in language in addition to that required for graduation. In selecting minors or elective subjects, it is recommended that students give special consideration to the following: Greek, Latin, French, German, Italian, philosophy, history, and fine arts.

Students who minor in English should take as a minimum one course (3 semester hours) in each group of courses listed below.

Students who major in English must choose 21 hours of the possible 24-40 hours required of a major from courses in several groups, as follows:

1. Three hours in language (Eng. 101, 102, 104, or 8).
2. Six hours in major figures (Eng. 104, 112, 115, 116, 121, 155, 156).
3. Six hours in survey or type courses (Eng. 106, 110, 111, 112, 113, 120, 122, 123, 125, 126, 129, 130, 134, 135, 139, 140, 143, 144, 145, 157).
4. Six hours in American literature (Eng. 148, 150, 151, 155, 156).

Foreign Languages and Literature

Two types of majors are offered in French, German, or Spanish: one for the general student or the future teacher and the other for those interested in a rounded study of a foreign area for the purpose of understanding another nation through its literature, history, sociology, economics, and other aspects.

Literature and Language Major

Language and literature as such are stressed in the first type of major. Specific minimum requirements beyond the first two years are a semester each of intermediate and advanced conversation (Fr., Ger., or Span. 8 or 9 and 80 or 81), a semester of grammar review (Fr., Ger., or Span. 71), six hours of the introductory survey of literature (Fr., Ger., or Span. 75 and 76), any twelve hours in literature courses numbered 100 or above—a total of 26 semester hours. Beyond this minimum further courses in the Department are desirable and as electives work in American and in Comparative Literature is strongly recommended; Comparative Literature 101 and 102 are required.

Foreign Area Major

The area study major endeavors to provide the student with a knowledge of various aspects of the country whose language he is studying. Specific minimum requirements beyond the first two years are ten hours of conversation, *Life and Culture* (Fr., Ger., or Span. 161 and 162), three hours of *Advanced Composition* (Fr., Ger., or Span. 121) and six hours in literature courses numbered 100 or above—a total of 25 semester hours. In addition the student takes, in lieu of a minor in one department, twenty to thirty-six hours in geography, history, political science, sociology, or economics, distributed through these fields in consultation with advisors in the Foreign Language Department. The student is urged to take some elective work in American and in Comparative Literature.

Journalism

The program in journalism provides training for students wishing to enter the fields of newspaper reporting or editing, magazine writing or editing, public information service, commercial information service, govern-

ment correspondence, publicity, public relations, and the teaching of journalism.

Students in journalism are provided opportunities for practical training through laboratories conducted in conjunction with the student publications. Students are also encouraged to work part time for professional newspapers or the wire services.

The program is supplemented by open meetings with guest lecturers with high professional standing in the various journalistic fields.

Curriculum

	—Semester—	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Modern Language	3	3
L. S. 1, 2—Library Methods.....	1	1
Natural Science	4	4
Speech 1, 2—Public Speaking.....	2	2
M. I. 1, 2—Basic R. O. T. C. (Men).....	3	3
P. Ed. 42, 44—Hygiene (Women).....	2	2
Physical Activities (Men and Women).....	1	1
	17-18	17-18
Total		

All freshmen enrolled under this curriculum will find it to their advantage to begin work on a student publication during the freshman year.

Sophomore Year

Journ 10, 11—News Reporting I and II.....	3	3
Eng. 3, 4 or 5, 6—Composition and Readings in English or World Literature	3	3
History 5, 6—History of American Civilization.....	3	3
Modern Language	3	3
O. T. 1—Principles of Typewriting or Elective.....	....	2
M. I. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
	15-18	15-18
Total		

Junior Year

Journ. 160, 161—News Editing I and II.....	3	3
Journ. 164—Magazine Writing	3	....
Journ. 165—Feature Writing .....	....	3
B. A. 151—Advertising (or two credits in photography).....	....	3
Eng. 8, 101, 102, or 104—(Studies in the origins of the English language)	3	....
Natural Science	4	....
Electives* in Comparative Literature, Economics, English, Fine or Practical Art, Government and Politics, History, Modern Language, Philosophy, Psychology, Sociology, or Speech.....	4	6
	17	15
Total		

* Majors in journalism should select a minor from one of these fields.

<i>Senior Year</i>	—Semester—	
	I	II
Journ. 174—Editorial Writing*	3	....
or		
Journ. 175—Reporting of Public Affairs*		
Journ. 176—Evaluation of Current Journalistic Practice.....	....	3
Electives in Comparative Literature, Economics, English, Fine or Practical Art, Government and Politics, History, Modern Language, Philosophy, Psychology, Sociology, or Speech.....	9	9
Other Electives	3	3
Total	15	15

Philosophy

The department's undergraduate courses are designed to help students attain philosophical perspective, clear understanding, and sound critical evaluation concerning the nature of man, his place in the universe, and the significance of the principal types of human experiences and activities.

To those students who seek a broad, liberal and cultural background of knowledge, but because of specialized studies have only a minimum of free electives, the department offers Philosophy 1, Philosophical Perspectives on nature, man, religion and science, and Philosophy 2, Philosophical Perspectives on morality, government, education, and art. For the general picture, both courses are recommended; each, however, is available separately.

To students in other fields who wish to explore the philosophy of their subjects, the department offers a choice among a group of specifically related courses: 51, Philosophy of Art; 52, Philosophy of Literature; 53, Philosophy of Religion; 54, Political and Social Philosophy; 55, Logic; 56, Philosophy of Science.

To students of literature, history, or the history of ideas, the department offers historical courses in ancient, medieval, modern, recent and contemporary, and American philosophy. The last course is especially relevant for students of American Civilization.

Minors in philosophy are especially suitable for students majoring in English, Literature, the Social Sciences, American Civilization, and in the pre-Ministry and pre-Law fields. Interested students should consult with the chairman of the department.

Majors in philosophy will include in their program, 101, Ancient Philosophy; 102, Modern Philosophy; 112, Recent and Contemporary Philosophy; 151, Ethics, and a selection of at least four other semester courses in the department. These will normally include one semester of Topical Investigations, the topic to be chosen in consultation with the department chairman to meet the student's special interests and needs.

* May be substituted for any other upper division course in journalism.

SPEECH AND DRAMATIC ART

The courses in this department have two main functions: (1) to provide work in public speaking and allied fields which will meet the needs of all students in the university; (2) to provide an integrated unit of work which will allow a student to major in Speech. A major shall consist of a minimum of 30 hours of which 15 hours must be in courses numbered 100 and above. A minor shall consist of 12-18 credits of which 6 must be in courses numbered 100 and above. All majors and minors must complete Speech 1, 2, 3, 4. Speech 5, 6 will be required of those students who have not demonstrated effective platform speaking. In meeting the Arts and Sciences Natural Science requirement it is recommended that Speech majors elect Zoology 16. A student majoring in Speech may concentrate in: (a) public speaking; (b) drama; (c) speech sciences; (d) radio.

IV. THE PHYSICAL SCIENCES

Curriculum for General Physical Sciences

This general curriculum is offered for students who desire a basic knowledge of the physical sciences without immediate specialization in any one of them. By proper selection of courses in the latter semesters, a student may concentrate in the field of his choice. A number of selections are possible and there is considerable freedom in the choice of electives.

Thirty-six hours in addition to underclass departmental requirements in the three Departments of Chemistry, Mathematics, and Physics are required. Of these 36 hours, 18 hours must be of 100 level and taken in at least two of the three departments.

(This curriculum represents only two of the possible selections of courses open to a student majoring in General Physical Science. Beginning students who want to select this field as a major should consult the major advisor before making up their schedules.)

<i>Freshman Year</i>	—Semester—	
	I	II
Chem 1, 3—General Chemistry.....	}	4
or		
Phys. 10, 11—Fundamentals of Physics.....	}	4
Eng. 1, 2—Composition and Readings in American Literature.....		
Math. 14, 15, 17—Trig., Algebra and Geometry.....	3	3
G. & P. 1—American Government.....	5	4
Soc. 1—Sociology of American Life.....	3	....
M. S. 1, 2—Basic R. O. T. C. (Men).....	....	3
Hea. 2, 4—Hygiene (Women).....	3	3
Physical Activities	2	2
	1	1
Total.....	17-18	17-18

	—Semester—	
	I	II
<i>Sophomore Year</i>		
Chem. 1, 3—General Chemistry.....	4-3	4-3
or		
Chem. 31, 32, 33, 34—Elements of Organic Chemistry and Laboratory	3-4	3-4
Phys. 50, 51—Applied Mechanics.....		
or	3	3
Phys. 10, 11—Fundamentals of Physics.....		
Eng. 3, 4—Composition and Readings in World Literature.....	1	1
or		
Eng. 5, 6—Composition and Readings, mainly in English Literature..	4	4
Sp. 18, 19—Introductory Speech.....		
Math. 20, 21—Calculus	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....		
Physical Activities	1	1
Total	16-19	16-19
<i>Junior Year</i>		
Modern Language	3	3
H. 5, 6—History of American Civilization.....	3	3
Electives	4	4
Electives in Physical Sciences.....	7	7
Total.....	17	17
<i>Senior Year</i>		
Modern Language	3	3
Electives in Physical Sciences.....	4	4
Electives	8	8
Total.....	15	15

Chemistry

The science of chemistry is so vast in scope that completion of a well-planned course of undergraduate study is necessary before specialization. The curriculum outlined below describes such a course of study. The sequence of courses given should be followed as closely as possible; it is realized, however, that some deviation from this sequence may be necessary toward the end of the program. All of the courses in chemistry listed, unless otherwise designated, are required of students majoring in chemistry.

Chemistry Curriculum

Freshman Year

Chem. 1, 3—General Chemistry.....	4	4
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
Math. 14—Plane Trigonometry	2	...
Math. 15—College Algebra.....	3	...
Math. 17—Analytic Geometry .....	...	4
G. & P. 1—American Government.....	3	...
Soc. 1—Sociology of American Life.....	...	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities	1	1
Total	18-19	17-18

<i>Sophomore Year</i>	—Semester—	
	I	II
Chem. 15, 17—Qualitative Analysis	3	3
Chem. 35, 37—Elementary Organic Chemistry.....	2	2
Chem. 36, 38—Elementary Organic Laboratory.....	2	2
Speech 18, 19—Introductory Speech.....	1	1
Ger. 1, 2—Elementary German.....	3	3
Math. 20, 21—Calculus.....	4	4
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	16-19	16-19
<i>Junior Year</i>		
Chem. 21, 23—Quantitative Analysis	4	4
Chem. 141, 143—Advanced Organic Chemistry.....	2	2
Chem. 142, 144—Advanced Organic Laboratory.....	2	2
*Eng. 3, 4—Composition and Readings in World Literature.....	3	3
*Eng. 5, 6—Composition and Readings, Mainly in English Literature...	3	3
Ger. 6, 7—Intermediate Scientific German.....	3	3
Phys. 20, 21.....	5	5
Total.....	19	19
<i>Senior Year</i>		
H. 5, 6—History of American Civilization.....	3	3
Chem. 101—Advanced Inorganic Chemistry.....	....	2
Chem. 187, 189—Physical Chemistry	3	3
Chem. 188, 190—Physical Chemistry Laboratory.....	2	2
Chem. 146—The Identification of Organic Compounds.....	2	....
Electives in Biological Sciences, Chemistry, Physics, or Mathematics..	5-8	5-8
Total	15-18	15-18

Mathematics

This curriculum offers training in the fundamentals of Mathematics in preparation for teaching, industrial work, or graduate work in Mathematics.

Students majoring in mathematics who complete freshman and sophomore courses in mathematics with distinction are eligible to try for honors in mathematics. To receive the honors degree in mathematics, a student must: 1. Complete the curriculum in mathematics with an average grade of B in all subjects; 2. Pass an honors examination in mathematics at the end of the senior year; 3. Write a satisfactory thesis on an assigned topic in mathematics in the senior year. Students who wish to try for honors in mathematics should consult the Head of the department at the conclusion of their sophomore year.

The mathematics curriculum offers three options depending on the choice of electives in the Junior and Senior years.

Pure Mathematics option. Electives in mathematics must include three hours in each of the fields of algebra and geometry.

* Choose one.

Applied Mathematics option. Electives in mathematics must include six hours in the fields of algebra and geometry, and the remaining six hours in the field of applied mathematics. Minor electives will be selected from the Physical Sciences or Engineering in consultation with the Head of the department of Mathematics.

Mathematical Statistics Option. Electives must include twelve hours in mathematical statistics and six hours in advanced algebra. Students electing this option may omit Math. 115.

Mathematics Curriculum

	—Semester—	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
Speech 18, 19—Introductory Speech	1	1
Lang. 1, 2—French or German.....	3	3
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
Math. 14—Plane Trigonometry.....	2	....
Math. 15—College Algebra	3	....
Math. 17—Analytic Geometry .....	....	4
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities	1	1
Total	18 or 19	17 or 18

Sophomore Year

Eng. 3, 4—Composition and Readings in World Literature.....	3	3
Lang. 4, 5—French or German.....	3	3
Math. 20, 21—Calculus	4	4
Phys. 20, 21—General Physics.....	5	5
H. 5, 6—History of American Civilization (Women).....	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	19	19

Junior Year

Math. 110, 111—Advanced Calculus.....	3	3
Electives—Mathematics	3	3
Electives—Minor	5-6	5-6
Electives	3	3
H. 5, 6—History of American Civilization (Men).....	3	3
Elective (Women)	3	3
Total	17-18	17-18

Senior Year

Math. 114, 115—Differential Equations.....	3	3
Electives—Mathematics	3	3
Electives—Minor	6	6
Electives	3	3
Total	15	15

Physics Curriculum

The physics curriculum is designed for students who desire training in the fundamentals of physics in preparation for teaching, graduate work, and for positions in governmental, industrial and biophysical laboratories. In connection with the curriculum suggested below a minor may be chosen to suit the field of study selected. A minor may be taken in biology, chemical engineering, chemistry, civil engineering, electrical engineering, mathematics, mechanical engineering or any allied field. Students interested in applied or engineering physics should minor in one of the fields of engineering. Entering freshmen who may want to select physics as a major should consult the Head of the Physics Department before making up their schedules.

Physics Curriculum

	—Semester—	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
Sp. 18, 19—Introductory Speech.....	1	1
Math. 14, 15, 17—Trig., Alg., Anal., Geom.....	5	4
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
Language or Physics.....	3-4	3-4
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities	1	1
Total	18-20	17-19
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and Readings in World Literature.....	3	3
Math. 20, 21—Differential and Integral Calculus.....	4	4
Language	3	3
Physics	4-5	4-5
H. 5, 6—History of American Civilization (Women).....	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	18-19	18-19
<i>Junior Year</i>		
H. 5, 6—History of American Civilization (Men).....	3	3
Physics	5	5
Language, Mathematics, or Chemistry.....	6-7	6-7
Electives	3	3
Total	17-18	17-18
<i>Senior Year</i>		
Chemistry, Engineering, Mathematics and Physics.....	15-17	15-17
Total	15-17	15-17

V. THE SOCIAL SCIENCES*

General Sociology Curriculum

In addition to the general university requirements, a major in sociology consists of a minimum of 30 semester hours of sociology (including Sociology 1) of which 12 hours must be in courses numbered 100 and above. Only credit with a grade of C or more can be counted as a part of the major requirement. The following sociology courses are required:

Sociology 1—The Sociology of American Life.

Sociology 2—Principles of Sociology.

Sociology 183—Social Studies.

Sociology 186—Sociological Theory.

Sociology 196—Senior Seminar.

A minor in sociology consists of a minimum of 18 semester hours, of which at least six hours must be in courses numbered 100 and above.

Social Service Curriculum

This curriculum comprises a four-year preprofessional program in the College of Arts and Sciences with a major in sociology and supporting subjects, leading to the degree of Bachelor of Arts. The curriculum combines a liberal arts education with a sound foundation for the general field of social service and provides: (1) preprofessional preparation for students planning to pursue graduate professional study in social service; (2) a background for responsible civic leadership in the field of social welfare for students who are not planning a professional social service career but who as citizens will be active in various programs of social welfare and community betterment; (3) basic training for students who may go immediately upon graduation from college into certain social service positions for which graduate professional education is not required. Completion of this curriculum with the B. A. degree meets the educational qualifications for many beginning positions in public welfare, public assistance, social services to individuals and families, social security, and other areas of social service.

The first three years of this curriculum are devoted to a broad liberal education with emphasis on the study of the fundamentals of human association, social motivation, and societal organization. The fourth year includes an introduction to the basic principles, methods, and organization of the social services. Flexibility to meet the varying interests and needs of individual students is provided by the electives in the junior and senior years.

Students who enter this curriculum with advanced standing may be given credit for comparable course work already taken, except that the last year must be completed in residence at this University.

*For statements concerning Economics, Geography, and Government and Politics see the Catalog of the College of Business and Public Administration.

—Semester—

Freshman Year

	I	II
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Modern Language	3	3
Mathematics or Natural Science.....	3	3
Soc. 2—Principles of Sociology.....	....	3
L. S. 1—Library Science.....	1	1
Speech 18, 19—Introductory Speech.....	1	1
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene I, II (Women).....	2	2
Physical Activities (Men and Women).....	1	1
Total	17-18	19-20

Sophomore Year

Eng. 3, 4 or 5, 6—Composition and Readings in World Literature.....	3	3
Psych. 1—Introduction to Psychology.....	3	....
Soc. 13 or 14—Rural Sociology (or Urban Sociology).....	....	3
Hist. 5, 6—History of American Civilization.....	3	3
Modern Language	3	3
Mathematics or Natural Science.....	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total.....	16-19	16-19

Junior Year

Soc. 51—Social Pathology.....	3	....
Soc. 52—Criminology .....	....	3
Soc. 131—Introduction to Social Service.....	3	....
Soc. 186—Sociological Theory .....	....	3
Econ. 37—Fundamentals of Economics.....	3	....
G. & P. 4 or 5—State Government or Municipal Gov't and Admin.....	3	....
Electives in related subjects.....	3	9
Total.....	15	15

Senior Year

Soc. 118—*Community Organization .....	....	3
Soc. 171—*Family and Child Welfare.....	3	....
Soc. 173—Social Security.....	3	....
Soc. 174—*Public Welfare .....	....	3
Soc. 183—Social Statistics	3	....
Soc. 196—Senior Seminar .....	....	3
Electives in related subjects.....	6	6
Total.....	15	15

Crime Control Curriculum

This curriculum comprises a four-year preprofessional program in the College of Arts and Sciences, with a major in sociology and a minor in psy-

* Supervised field trips and observation of the functioning of representative agencies, institutions, and organizations are required in connection with these courses.

chology, leading to the degree of Bachelor of Arts. The curriculum combines a liberal arts education with basic training for the field of crime and delinquency prevention and control. It is designed specifically for students preparing for positions in correctional and penal institutions, institutions for juveniles, juvenile courts, probation and parole services, the so-called "area projects," research in juvenile delinquency and criminology, and similar positions.

Students entering this curriculum with advanced standing will be given credit for comparable course work already completed.

	—Semester—	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Modern Language	3	3
Speech 18, 19—Introductory Speech.....	1	1
Zool. 1—General Zoology.....	4	....
Soc. 2—Principles of Sociology.....	....	3
Elective .....	....	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities (Men and Women).....	1	1
Total	17-18	18-19
<i>Sophomore Year</i>		
Eng. 3, 4 or 5, 6—Composition and Readings in English or in World Literature	3	3
Hist. 5, 6—History of American Civilization.....	3	3
Modern Language	3	3
Zool. 14, 15—Human Anatomy and Physiology.....	4	....
Psych. 1—Introduction to Psychology	3	....
Soc. 52—Criminology .....	....	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total.....	17-20	17-20
<i>Junior Year</i>		
Soc. 51—Social Pathology.....	3	....
Soc. 131—Introduction to Social Service.....	3	....
Soc. 153—Juvenile Delinquency	3	....
Soc. 154—*Crime and Delinquency Prevention.....	....	3
Soc. 183—Social Statistics	3	....
Soc. 186—Sociological Theory .....	....	3
B. A. 10, 11—Organization and Control.....	2	2
Psych. 5—Mental Hygiene	3	....
Psych. 131—Abnormal Psychology.....	....	?
Electives .....	....	6
Total.....	17	17

* Supervised field trips and observation of the functioning of representative agencies, institutions, and organizations are required in connection with these courses.

<i>Senior Year</i>	<i>Semester</i>	
	<i>I</i>	<i>II</i>
Soc. 114—The City	3	....
Soc. 118—*Community Organization .....	....	3
Soc. 145—Social Control	3	....
Soc. 156—*Institutional Treatment of Criminals and Delinquents.....	....	3
Soc. 196—Senior Seminar .....	....	3
Psych. 125—Child Psychology	3	....
Psych. 150—Tests and Measurements.....	3	....
Psych. 161—Psychological Techniques in Personnel Administration....	....	3
Electives	3	3
Total.....	15	15

The Curriculum in History

The study of history is basic for the cultural background of all fields of knowledge. In addition, the Department of History offers a curriculum which is designed to assist students who wish to prepare themselves for entering several fields of professional activity. Specifically these fields are (1) teaching history and the social sciences at the secondary level; (2) the field of journalism which requires a broad historical background; (3) research and archival work; (4) the diplomatic service. In addition, the department offers adequate preparation and training for those who intend to pursue higher degrees and prepare themselves for teaching at the college level.

Undergraduate history majors must complete the following departmental requirements:

1. Every major is required to complete a minimum of 24 semester hours in advanced courses, of which no less than 15 and no more than 18 must be taken in any one field of history. Thus, if a major has completed 18 semester hours in United States history, the remaining courses must be taken in some other fields of history, such as European or Latin-American history.
2. Prerequisites for majors in history are History 5 and 6 (required of all college students) and History 1 and 2 or History 3 and 4.
3. All majors are required to take the proseminar during their senior year.
4. No grade of "D" in the major field will be counted toward completing the major requirements for graduation.

Students selecting a minor in history must complete 12 semester hours in advanced courses.

* Supervised field trips and observation of the functioning of representative agencies, institutions, and organizations are required in connection with these courses.

VI. PRE-PROFESSIONAL CURRICULUMS†

COMBINED PROGRAM IN ARTS AND SCIENCES AND LAW

The School of Law of the University requires two years of academic credit for admission to the school.

The University offers also a combined program in arts and law leading to the degrees of bachelor of arts and bachelor of laws. Students pursuing this combined program will spend the first three years in the College of Arts and Sciences at College Park. During this period they will complete the prescribed curriculum in prelegal studies as outlined below, or a total of 106 semester hours for men and 98 for women, and they must complete the requirements for graduation, as indicated below. If students enter the combined program with advanced standing, at least the third full year's work, i.e. 30 semester hours of credit—must be completed in residence at College Park. Upon the successful completion of one year of full-time law courses in the School of Law in Baltimore, the degree of bachelor of arts may be awarded on the recommendation of the Dean of the School of Law, and provided the student has earned at least a total of 120 credits exclusive of military science and physical activities with a C average. The degree of bachelor of laws may be awarded upon the completion of the combined program.

Arts-Law Curriculum

	—Semester—	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
Science or Mathematics	3	3
G. & P. 1—American Government.....		
or		
Soc. 1—Sociology of American Life.....	3	3
Foreign Language	3	3
Speech 1, 2—Public Speaking.....	2	2
L. S. 1, 2—Library Methods.....	1	1
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Hea. 2, 4—Hygiene (Women).....	2	2
Total	18-19	18-19

Sophomore Year

Eng. 3, 4—Composition and Readings in World Literature.....	3	3
Econ. 31, 32—Principles of Economics.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
Science or Mathematics	3	3
Foreign Language	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	16-19	16-19

† For Pre-Veterinary program, see the Catalog of the College of Agriculture.

<i>Junior Year</i>	<i>Semester</i>	
	<i>I</i>	<i>II</i>
G. & P. 4—State Government.....	3	....
G. & P. 124—Legislatures and Legislation.....	....	3
Hist. 135, 136—Constitutional Hist. of the U. S.....	3	3
Psych. 1—Introduction to Psychology.....	3	....
Psych. 2—Applied Psychology.....	....	3
G. & P. 181—Administrative Law.....	....	3
Econ. 140—Money and Banking.....	3	....
Econ. 160—Labor Economics.....	3	....
Electives.....	....	3
Total.....	15	15

FIVE-YEAR COMBINED ARTS AND SCIENCES AND NURSING

The first two years of this curriculum comprising a minimum of 60 semester hours exclusive of hygiene and physical activities, are taken in the College of Arts and Sciences at College Park and the professional training is taken in the School of Nursing of the University in Baltimore or in the Training School of Mercy Hospital, Baltimore.

In addition to the Diploma in Nursing, the degree of Bachelor of Science in Nursing may, upon the recommendation of the Director of the School of Nursing, be granted at the end of the professional training. Full details regarding the nursing curriculum may be found in the section of the catalog dealing with the School of Nursing.

A student may enter this combined curriculum with advanced standing but the second year, consisting of a minimum of 30 credits, exclusive of physical training, must be completed in College Park and the professional training must be completed in one of the schools indicated above. To qualify for the combined degree the student must complete the required work at College Park before beginning the professional training in Baltimore.

In order to receive the Bachelor of Science degree the student must fulfill the grade requirements of the university.

Arts-Nursing Curriculum

Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Chem. 11, 13—General Chemistry.....	3	3
L. S. 1, 2—Library Methods.....	1	1
Modern Language.....	3	3
Speech 18, 19—Introductory Speech.....	1	1
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities.....	1	1
Total.....	17	17

<i>Sophomore Year</i>	—Semester—	
	I	II
Eng. 3, 4—Composition and World Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Zool. 1—General Zoology.....	4	....
Bact. 1—General Bacteriology.....	....	4
Psych. 1—Introduction to Psychology.....	3	....
Econ. 37—Fundamentals of Economics.....	....	3
Modern Language	3	3
Physical Activities	1	1
Total.....	17	17

PRE-MEDICAL CURRICULUM

This course, which consists of three years of training in the College of Arts and Sciences, is recommended for admission to the School of Medicine of the University of Maryland. It also meets the requirements prescribed by the Council on Medical Education of the American Medical Association.

This curriculum also offers to the student a combined program leading to the degrees of Bachelor of Science and Doctor of Medicine. The preprofessional training is taken in residence in the College of Arts and Sciences at College Park, and the professional training in the School of Medicine in Baltimore.

Students who have elected the combined program of Arts and Sciences and Medicine may, upon recommendation of the Dean of the School of Medicine, be granted the degree of Bachelor of Science by the College of Arts and Sciences. To qualify for this degree at least 90 semester credits exclusive of required work in military science and physical education in this college and the first year of the School of Medicine must have been completed so that the quantitative requirements of 120 semester hours are met. The qualitative grade requirements of the University must also be fulfilled. The degree will be granted at the commencement following the completion of the student's second year in medical school.

A student may enter this combined curriculum with advanced standing, but the last year of the preprofessional training, consisting of a minimum of 30 credits, exclusive of physical training and military instruction, must be completed in College Park and the professional training must be completed in the University of Maryland School of Medicine in Baltimore.

Students who expect to qualify for the combined degree must complete the work as outlined in the curriculum. Changes may be made only when authorized by the Dean of the College of Arts and Sciences. Permission to continue in the pre-medical curriculum is granted only to students who have demonstrated, on the basis of their previous academic records, that they are fully qualified to carry the work included in this course.

Pre-Medical Three Year Curriculum

<i>Freshman Year</i>	—Semester—	
	I	II
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Zool. 2, 3—Fundamentals of Zoology.....	4	4
Math. 10, 11—Algebra, Trigonometry and Analytic Geometry.....	3	3
Chem. 1, 3—General Chemistry.....	4	4
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities	1	1
Total.....	20-21	20-21

Sophomore Year

Eng. 3, 4—Composition and World Literature.....	3	3
Zool. 5—Comparative Vertebrate Morphology.....	4	....
Zool. 20—Vertebrate Embryology.....	....	4
Chem. 35, 36, 37, 38—Elementary Organic Chemistry.....	4	4
Modern Language	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total.....	15-18	15-18

Junior Year

Psych. 1—Introduction to Psychology.....	..	3
Phys. 10, 11—Mechanics and Heat; Sound, Optics, Magnetism and Electricity	4	4
H. 5, 6—History of American Civilization.....	3	3
Modern Language	3	3
Speech 18, 19—Introductory Speech.....	1	1
Electives (Sciences)	7	4
Total.....	18	18

Senior Year

The curriculum of the first year of the School of Medicine of the University of Maryland is accepted by the College of Arts and Sciences as the fourth year of academic work toward the degree.

If at the beginning of the Senior Year the student decides to postpone his entrance to Medical School and to remain in the College of Arts and Sciences and complete work for the Bachelor Degree he may choose a major and minor in any departments in which he has completed the necessary underclass requirements. Because of the general nature of the first three years of this curriculum, the student has open to him a wide choice of departments in which he may specialize.

PRE-DENTAL CURRICULUM

Students entering the College of Arts and Sciences who desire to prepare themselves for the study of dentistry are offered the following curriculum, which meets the pre-dental requirements of the American Association of Dental Colleges. If the student decides to continue his college training and complete work for the Bachelor of Science degree, this curriculum will constitute the first two years of his college work. The courses chosen during the Junior and Senior years must meet the college and university requirements for graduation. Permission to continue in the pre-dental curriculum is granted only to students who have demonstrated, on the basis of their previous academic records, that they are fully qualified to carry the work included in this course.

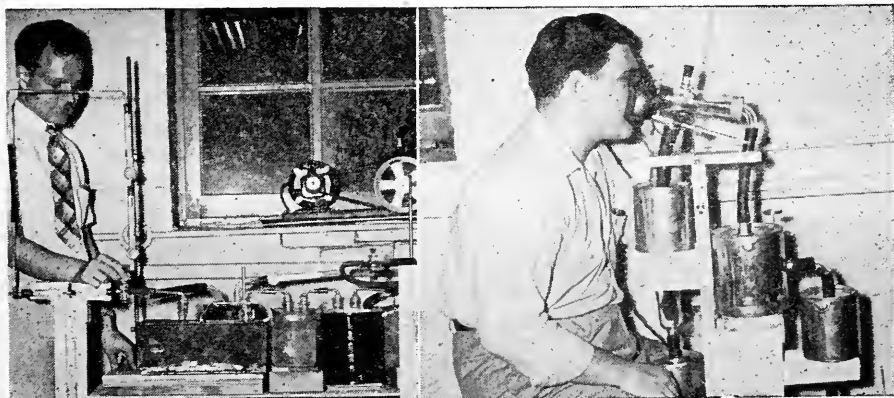
Pre-dental Two-Year Curriculum

	Semester	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Zool. 2, 3—Fundamentals of Zoology.....	4	4
Chem. 1, 3—General Chemistry.....	4	4
Math. 10, 11—Algebra, Trigonometry and Analytic Geometry.....	3	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	21	21
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 35, 36, 37, 38—Elementary Organic Chemistry.....	4	4
Physics 10, 11—Mechanics and Heat; Sound, Optics, Magnetism and Electricity	4	4
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Total	18	18

Department of Zoology

Measuring metabolism

An experiment in human respiration



COURSE OFFERINGS

The University reserves the right to withdraw or discontinue any course for which an insufficient number of students have registered to warrant giving the course. In such an event, no fee will be charged for transfer to another course.

Courses are designated by numbers as follows:

1 to 99: courses for undergraduates.

100 to 199: courses for advanced undergraduates and graduates. (Not all courses numbered 100 to 199 may be taken for graduate credit.)

200 to 299: courses for graduates only.

A course with a single number extends through one semester. A course with a double number extends through two semesters.

Courses not otherwise designated are lecture courses. The number of hours' credit is shown by the arabic numeral in parentheses after the title of the course.

A separate schedule of courses is issued each semester, giving the hours, places of meeting, and other information required by the student in making out his program. Students obtain these schedules when they register.

ART DEPARTMENT

Professor Wharton; Associate Professor Siegler; Instructors de Jonosi
and Maril

Art 1, 2. Charcoal Drawing (Antique) (3, 3).

Drawing from casts, preparatory to Life and Portrait drawing and painting. Stress is placed on fundamental principles, such as the study of relative proportions, values and modeling, etc. (Siegler.)

Art 5, 6. Still-life (3, 3).

First half semester devoted to elementary theory and practice of drawing. Methods of linear and tonal description with emphasis on perspective and light-and-shade. Second half semester, elementary theory and practice oil painting. Elementary theory and practice of composition introduced and utilized. Second semester, more advanced problems. (Siegler, Maril.)

Art 7, 8. Landscape Painting (3, 3).

Outdoor drawing and painting; organization of landscape material. (Art 7 and 8 are interchangeable.) (Maril.)

Art. 9. Historical Survey of Painting, Sculpture and Architecture (3).

An understanding of the epochs in the advance of civilization as expressed through painting, sculpture and architecture. A background to more detailed study. (Grubar.)

Art 10. History of American Art (1).

A Resume of the development of painting, sculpture, and architecture in this country and how American Art was influenced by social, political, and economical forces, here and abroad. (Grubar.)

Art 13, 14. Elementary Sculpture. (1).

Study of three-dimensional form compositions in round and bas-relief. Mediums used: clay, plasteline. (Maril.)

Art 16, 17. Art Appreciation (2, 2)—Prerequisites, Art. 9.

A course designed to help the student to a fuller appreciation and greater enjoyment of art. Lectures, discussions, slides and occasional visits to museums. (de Jonosi.)

Art 100, 101. Pictorial Composition (2, 2)—Prerequisites, Art. 1, 16.

Principles underlying graphic presentation of ideas. Problems to stimulate the students' imagination and enable them to do creative work. (Maril.)

Art 102, 103. Creative Painting (3, 3)—Prerequisites, Art. 1, 2, 5, 6.

Assignments of pictorial compositions aimed at both mural decoration and easel picture problems. Emphasis on the psychological and sociological angles of pictorial composition, involving some research. (Maril.)

Art 104, 105. Life Class (Drawing and Painting) (3, 3)—Prerequisites, Art 2 and 6.

Careful observation and study of the human figure for construction, action, form, and color. (Siegler.)

Art 106, 107. Portrait Class (Drawing and Painting) (3, 3)—Prerequisites, Art 1 and 5.

Thorough draftmanship and study of characterization and composition stressed. (Wharton.)

Art. 113, 114. Illustration (3, 3)—Prerequisites, Art 1, 5, 104.

This course is designed for the purpose of channeling fine art training into practical fields thereby preparing the student to meet the modern commercial advertising problems. Special emphasis will be placed upon layouts, magazine and book illustrating, outdoor poster display and calendar advertising along with cover and jacket designs.

ASTRONOMY**Astr. 1, 2. Astronomy (3, 3)—First and second semesters.**

An elementary course in descriptive astronomy.

Astr. 5. Navigation (3)—Second semester. Prerequisite, Math. 14 and 16.

The theory and practice of navigation.

BACTERIOLOGY

Professors Faber, Hansen; Associate Professors Laffer, Pelczar;
Assistant Professor Doetsch

Bact. 1. General Bacteriology (4)—First and second semesters. Two lecture and two laboratory periods a week.

The physiology, culture and differentiation of bacteria. Fundamental principles of microbiology in relation to man and his environment. Laboratory fee, \$10.00.

Bact. 5. Advanced General Bacteriology (4)—Second semester. Two lecture and two laboratory periods a week. Prerequisites, Bact. 1 and Chem. 3.

Emphasis will be given to the fundamental procedures and techniques used in the field of bacteriology with drill in the performance of these techniques. Lectures will consist of the explanation of various laboratory procedures. Laboratory fee, \$10.00.

Bact. 51. Household Bacteriology (3)—Second semester. Two lecture and one laboratory periods a week. For home economics students only.

Morphology and physiology of the bacteria, yeasts and molds. Application of the effect of chemical and physical agents in the control of microbial growth. Relationship of microbiology to home sanitation, food preservation and manufacture; personal and community hygiene. Laboratory fee, \$10.00.

Bact. 52. Sanitary Bacteriology (2)—Second semester. Two lecture periods a week. Prerequisite, Bact. 1.

This course comprises the lectures only of Bact 53.

Bact. 53. Sanitary Bacteriology. (4)—Second semester. Two lecture and two laboratory periods a week. Prerequisite, Bact. 5.

Bacteriological and public health aspects of water supplies and sewage disposal, restaurant and plant sanitation, insect and rodent control, and waste disposal. Occasional field trips. Laboratory fee, \$10.00.

Bact. 55. Sanitary Bacteriology for Engineers. (2)—First semester. One lecture and one laboratory period a week. For junior and senior students in engineering only.

Discussion of the fundamental principles of bacteriology and their relationship to water supply, sewage disposal and other sanitary problems. Demonstration of these principles in the laboratory. Laboratory fee, \$10.00.

Bact. 60. Journal Club (1)—First and second semesters. One lecture period a week. Prerequisite, a major in bacteriology with junior standing. Introduction to periodical literature, methods, interpretation and presentation of reports.

For Advanced Undergraduates and Graduates

Bact. 101. Pathogenic Bacteriology (4)—First semester. Two lecture and two laboratory periods a week. Prerequisite, Bact. 5.

The role of microorganisms in the diseases of man and animals with emphasis upon the differentiation and culture of bacterial species, types of disease, modes of disease transmission; prophylactic, therapeutic and epidemiological aspects. Laboratory fee, \$10.00. (Faber.)

Bact. 103. Serology (4)—Second semester. Two lecture and two laboratory periods a week. Prerequisite, Bact. 101.

Infection and resistance; principles and types of immunity; hypersensitiveness. Fundamental techniques of major diagnostic immunological reactions and their application. Laboratory fee, \$10.00. (Faber.)

Bact. 104. History of Bacteriology (1)—First semester. One lecture period a week. Prerequisite, a major in bacteriology with senior standing.

History and integration of the fundamental discoveries of the science. The modern aspects of cytology, taxonomy, fermentation, and immunity in relation to early theories. (Doetsch.)

Bact. 105. Clinical Methods (4)—First semester. Two lecture and two laboratory periods a week. Prerequisite, Bact. 103.

A practical course designed to integrate clinical laboratory procedures in terms of hospital and public health demands. Examination of sputum, feces, blood, spinal fluids, urine, etc. Laboratory fee, \$10.00. (Faber.)

Bact. 108. Epidemiology and Public Health (3)—Second semester. Three lecture periods a week. Prerequisite, Bact. 101.

History, characteristic features and epidemiology of the important communicable diseases; public health aspects of man's struggle for existence; public health administration and responsibilities; vital statistics. (Faber.)

Bact. 131. Food Bacteriology. (4)—First semester. Two lecture and two laboratory periods a week. Prerequisite, Bact. 5.

The relationship of microorganisms to fresh and preserved food, the use of microorganisms in the preparation of foods and methods of control of these organisms. Discussion of the pure food laws. Demonstration of the fundamental principles involved and the methods used in the examination of different types of foods. Laboratory fee, \$10.00. (Laffer.)

Bact. 133. Dairy Bacteriology (4)—First semester. Two lecture and two laboratory periods a week. Prerequisite, Bact. 5.

Relation of bacteria, yeasts and molds to milk, cream, butter, ice-cream, cheese and other dairy products. Standard methods of examination, public health requirements, plant sanitation. Occasional inspection trips. Laboratory fee, \$10.00. (Doetsch.)

Bact. 135. Soil Bacteriology (4)—Second semester. Two lecture and two laboratory periods a week. Prerequisite, Bact. 5.

The role played by microorganisms in the soil; nitrification, denitrification, nitrogen-fixation and decomposition processes; cycles of elements; relationships of microorganisms to soil fertility. Laboratory fee, \$10.00. (Hansen.)

Bact. 161. Systematic Bacteriology (4)—First semester. Two lecture and two laboratory periods a week. Prerequisite, 16 credits in bacteriology.

History of bacterial classification; genetic relationships; international codes of nomenclature; bacterial variation as it affects classification. Laboratory fee, \$10.00. (Hansen.)

Bact. 181. Bacteriological Problems (3)—First and second semesters. Prerequisites, 16 credits in bacteriology. Registration only upon the consent of the instructor.

This course is arranged to provide qualified undergraduate majors in bacteriology and majors in allied fields an opportunity to pursue specific bacteriological problems under the supervision of a member of the department. Laboratory fee, \$10.00.

For Graduates

Bact. 201. Advanced Pathogenic Bacteriology. (4)—First semester. Two lecture and two laboratory periods a week. Prerequisite, 30 credits in bacteriology and allied fields, including Bact. 103.

Primarily a study of the fungi associated with disease and practice in the methods of isolation and identification. Discussion of the rickettsiae and viruses. Practice in the preparation of materials for examination with the electron microscope. Laboratory fee, \$10.00. (Laffer.)

Bact. 204. Bacterial Metabolism (2)—First semester. Two lecture periods a week. Prerequisite, 30 credits in bacteriology and allied fields, including Chem. 161 and 162.

Bacterial enzymes, nutrition of autotrophic and heterotrophic bacteria, bacterial growth factors, dissimilation of carbohydrate and nitrogenous substrates. (Pelczar.)

Bact. 206. Special Topics (1)—First and second semesters. One lecture period a week. Prerequisite, 20 credits in bacteriology.

Presentation and discussion of fundamental problems and special subjects in the field of bacteriology.

Bact. 231. Advanced Food Bacteriology (4)—First semester. Two lecture and two laboratory periods a week. Prerequisite, 30 credits in bacteriology including Bact. 131.

The role of microorganisms in food handling and processing with emphasis upon commercial and factory aspects. Laboratory fee, \$10.00. (Laffer.)

Bact. 280. Seminar (1)—First and second semesters. Prerequisite, 30 credits in bacteriology.

Discussions and reports prepared by majors in bacteriology engaged in current research; presentations of selected subjects dealing with recent advances in microbiology.

Bact. 291. Research—First and second semesters. Prerequisite, 30 credits in bacteriology.

Credits according to work done. The investigation is outlined in consultation with and pursued under the supervision of a senior staff member of the department. Laboratory fee, \$10.00.

CHEMISTRY

Professors Drake, Svrbely, White; Associate Professors Pickard, Pratt, Reeve, Rollinson, Veitch, Wiley, Woods; Assistant Professors Aldridge, Brown, Carruthers, Dewey, Story and Stuntz.

Laboratory fees in Chemistry are \$10.00 per semester.

A. Analytical Chemistry

Chem. 15, 17. Qualitative Analysis (3, 3)—Two lectures and one three-hour laboratory period the first semester; one lecture and two three-hour laboratory periods the second semester. Prerequisite, Chem. 3.

Chem. 19. Quantitative Analysis (4)—First and second semesters. Two lectures and two three-hour laboratory periods per week. Prerequisite, Chem. 1, 3.

Chem. 21, 23. Quantitative Analysis (4, 4)—First and second semesters. Two lectures and two three-hour laboratory periods per week. Prerequisite, Chem. 15, 17.

This course includes a study of the principal operations of gravimetric and volumetric analysis. Required of all students majoring in Chemistry.

Chem. 166, 167. Food Analysis (3, 3)—First and second semesters. One lecture and two three-hour laboratory periods per week. Prerequisites, Chem. 19, 31, 32, 33, 34.

The qualitative and semi-quantitative analysis of essential food constituents. The qualitative determination of trace elements is emphasized. For students in agriculture, home economics and bacteriology.

Chem. 206, 208. Spectrographic Analysis (1, 1)—One three-hour laboratory period per week. Registration limited. Prerequisites, Chem. 188, 190 and consent of the instructor. (White.)

Chem. 221, 223. Chemical Microscopy (2, 2)—First and second semesters. One lecture and one three-hour laboratory period per week. Registration limited. Prerequisite, consent of instructor. Chem. 221 is a prerequisite for Chem. 223.

A study of the principles of microscopic analysis. Chem. 223 is devoted to the study of the optical properties of crystals. (Stuntz.)

Chem. 225. Polarography (2)—Two lectures per week.

A course designed to present the fundamental principles of electrometric methods in general and to show the technique and application of polarography in the various branches of chemistry. This course and chemistry 207 will be offered in alternate years.

Chem. 226, 228. Advanced Quantitative Analysis (2, 2)—First and second semesters. Two three-hour laboratory periods per week. Prerequisite, consent of instructor.

A study of advanced methods chosen to meet the needs of the individual.
(Stuntz.)

Chem. 266. Biological Analysis (2)—Second semester. Two three-hour laboratory periods per week. Prerequisites, Chem. 19, 31, 32, 33, 34.
(Wiley.)

B. Biochemistry

Chem. 41. The Chemistry of Textiles (4)—Second semester. Two lectures and two three-hour laboratory periods per week. Prerequisites, Chem. 31, 32, 33, 34.

A chemical study of the principal textile fibers.

Chem. 81. General Biochemistry (2)—First semester. Two lectures per week. Prerequisites, Chem. 31, 32, 33, 34, or Chem. 35, 36, 37, 38.

This course is designed primarily for students in home economics. Chem. 82 MUST be taken concurrently.

Chem. 82. General Biochemistry Laboratory (2)—First semester. Two three-hour laboratory periods per week. Prerequisites, Chem. 32, 34, or Chem. 36, 38.

A course designed to accompany Chem. 81.

Chem. 161, 163. Biochemistry (2, 2)—First and second semesters. Two lectures per week. Prerequisites, Chem. 31, 33, or Chem. 35, 37.

This course is designed primarily for students in agriculture, bacteriology, or chemistry, and for those students in home economics who need a more extensive course of biochemistry than is offered in Chem. 81, 82.

Chem. 162, 164. Biochemistry Laboratory (2, 2)—First and second semesters. Two three-hour laboratory periods per week. Prerequisites, Chem. 32, 34, or Chem. 36, 38.

Chem. 261, 263. Advanced Biochemistry (2, 2)—First and second semesters. Two lectures per week. Prerequisites, Chem. 141, 143, or consent of the instructor.
(Veitch.)

Chem. 262, 264. Advanced Biochemistry Laboratory (2, 2)—First and second semesters. Two three-hour laboratory periods per week. Prerequisite, consent of the instructor.
(Veitch.)

Chem. 268. Special Problems in Biochemistry (2-4)—First and second semesters. Two to four three-hour laboratory periods per week. Prerequisites, Chem. 161, 162, and consent of the instructor. (Veitch.)

C. Inorganic and General Chemistry

Chem. 1, 3. General Chemistry (4, 4)—First and second semesters. Two lectures, one quiz and two two-hour laboratory periods per week.

Chem. 5. Introductory Qualitative Analysis (3)—Second semester. One lecture and two three-hour laboratory periods per week. Prerequisite, Chem. 3.

Chem. 11, 13. General Chemistry (3, 3)—Two lectures and one three-hour laboratory period per week.

An abbreviated course in general chemistry especially designed for students in home economics. This course is open only to students registered in Home Economics and Arts-Nursing.

Chem. 101. Advanced Inorganic Chemistry (2)—Second semester. Two lectures per week. Prerequisites, Chem. 23, 37, 38.

(One or more courses of the group 201-239 will be offered each semester depending on demand.)

Chem. 201, 203. The Chemistry of the Rarer Elements (2, 2)—First and second semesters. Two lectures per week. (White.)

Chem. 202, 204. Advanced Inorganic Laboratory (2, 2)—First and second semesters. Two three-hour laboratory periods per week.

Chem. 205. Radiochemistry (2)—Two lectures per week. (Rollinson.)

Chem. 207. Chemistry of Inorganic Complex Compounds (2)—Two lectures per week. This course and Chem. 225 will be offered in alternate years.

Chem. 210. Radiochemistry Laboratory (1 or 2)—One or two three-hour laboratory periods per week. Registration limited. Prerequisites, Chem. 205 (or concurrent registration therein) and consent of instructor. (Rollinson.)

Chem. 239. Physical Techniques in Chemistry (2)—A survey of the tools available for the solution of chemical problems by means of physical techniques.

D. Organic Chemistry

Chem. 31, 33. Elements of Organic Chemistry (2, 2)—First and second semesters. Two lectures per week. Prerequisites, Chem. 1, 3.

Organic chemistry for students in agriculture, bacteriology and home economics.

Chem. 32, 34. Elements of Organic Laboratory (1, 1)—First and second semesters. One three-hour laboratory period per week. Prerequisites, Chem. 31, 33, or concurrent registration therein.

Chem. 35, 37. Elementary Organic Chemistry (2, 2)—First and second semesters. Two lectures per week. Prerequisites, Chem. 1, 3.

A course for chemists, chemical engineers, and premedical students.

Chem. 36, 38. Elementary Organic Laboratory (2, 2)—First and second semesters. Two three-hour laboratory periods per week. Prerequisites, Chem. 35, 37, or concurrent registration therein.

Chem. 141, 143. Advanced Organic Chemistry (2, 2)—First and second semesters. Two lectures per week. Prerequisites, Chem. 37, 38.

An advanced study of the compounds of carbon.

Chem. 142, 144. Advanced Organic Laboratory (2, 2)—First and second semesters. Two three-hour laboratory periods per week. Prerequisites, Chem 19 or 23, and Chem. 37, 38.

Syntheses and the quantitative determination of carbon and hydrogen, halogen, and nitrogen are studied.

Chem. 146, 148. The Identification of Organic Compounds (2, 2)—First and second semesters. Two three-hour laboratory periods per week. Prerequisites, Chem. 141, 143, or concurrent registration therein.

The systematic identification of organic compounds.

Chem. 150. Organic Quantitative Analysis (2)—First and second semesters. Two three-hour laboratory periods per week. Prerequisite, consent of the instructor.

The semi-micro determination of carbon, hydrogen, nitrogen, halogen and certain functional groups. (Aldridge.)

(One or more courses from the following group, 241, 253, will customarily be offered each semester.)

Chem. 241. Stereochemistry (2)—Two lectures per week. (Woods.)

Chem. 245. The Chemistry of the Steroids (2)—Two lectures per week. (Pratt.)

Chem. 249. Physical Aspects of Organic Chemistry (2)—Two lectures per week. (Woods.)

Chem. 251. The Heterocycles (2)—Two lectures per week. (Pratt.)

Chem. 253. Organic Sulfur Compounds (2)—Two lectures per week. (Dewey)

Chem. 254. Advanced Organic Preparations (2 to 4)—First and second semesters. Two to four three-hour laboratory periods per week.

Chem. 258. The Identification of Organic Compounds, an Advanced Course (2 to 4)—First and second semesters. Two to four three-hour laboratory periods per week. (Pratt.)

Chem. 260. Advanced Organic Laboratory (1 or 2)—First and second semesters. One or two three-hour laboratory periods per week.

An orientation course designed to demonstrate a new student's fitness to begin research in organic chemistry. (Pratt.)

Chem. 271. Glassblowing Laboratory (1)—One three-hour laboratory period per week. Prerequisite, consent of instructor. (Carruthers.)

E. Physical Chemistry

Chem. 181, 183. Elements of Physical Chemistry (2, 2)—First and second semesters. Two lectures per week. Prerequisites, Chem. 1, 3; Phys. 1, 2; Math. 10, 11; Chem. 19.

A course intended primarily for premedical students and students in the biological sciences. This course must be accompanied by Chem. 182, 184.

Chem. 182, 184. Elements of Physical Chemistry Laboratory (1, 1)—First and second semesters. One three-hour laboratory period per week. May be taken ONLY when accompanied by Chem. 181, 183.

The course includes quantitative experiments illustrating the principles studied in Chem. 181, 183.

Chem. 187, 189. Physical Chemistry (3, 3)—First and second semesters. Three lectures per week. Prerequisites, Chem. 19 or 21; Phys. 20, 21; Math. 20, 21.

A course primarily for chemists and chemical engineers.

Chem. 188, 190. Physical Chemistry Laboratory (2, 2)—First and second semesters. Two three-hour laboratory periods per week.

A laboratory course for students taking Chem. 187, 189.

The common prerequisites for the following courses are Chem. 187, 189, and Chem. 188, 190, or their equivalent. One or more courses of the group, 281-313, will be offered each semester depending on demand.

Chem. 281, 283. Theory of Solutions (2, 2)—First and second semesters. Two lectures per week. Prerequisite, Chem. 307. (Svirbely.)

Chem. 285. Colloid Chemistry (2)—Two lectures per week. (Pickard.)

Chem. 295. Heterogenous Equilibria (2)—Two lectures per week. (Pickard.)

Chem. 299. Reaction Kinetics (3)—Three lectures per week. (Svirbely.)

Chem. 303. Electrochemistry (3)—Three lectures per week. (Pickard.)

Chem. 304. Electrochemistry Laboratory (2)—Two three-hour laboratory periods per week. Prerequisite, consent of the instructor. (Pickard.)

Chem. 307. Chemical Thermodynamics (3)—Three lectures per week. (Svirbely.)

Chem. 311. Physicochemical Calculations (2)—Offered in summer session only. (Pickard.)

- Chem. 313. Molecular Structure (2)—Two lectures per week. (Brown.)
- Chem. 321. Quantum Chemistry (3)—Three lectures per week. Prerequisite, Chem. 307. (Brown.)
- Chem. 323. Statistical Mechanics and Chemistry (3)—Three lectures per week. Prerequisite, Chem. 307. (Brown.)

F. Seminar and Research

- Chem. 351. Seminar (1)—First and second semesters. (Staff.)
- Chem. 360. Research—First and second semesters, summer session. (Staff.)

COMPARATIVE LITERATURE

Professors Bode, Cardwell, Falls, Harman, Prah, Zucker; Lecturer McMannaway; Associate Professors Cooley, Mooney, Murphy, Weber, Zeeveld; Assistant Professors Manning, Parsons.

Requirements for major include Comparative Literature 101, 102. Comparative Literature courses can be counted toward a major or minor in English when recommended by the student's major adviser.

Comp. Lit. 1. Greek Poetry (2)—First semester.

Homer's *Iliad* and *Odyssey* with special emphasis on the literary form and the historical and mythological background.

Comp. Lit. 2. Later European Epic Poetry (2)—Second semester.

Virgil's *Aeneid*, Dante's *Divine Comedy*, *Nibelungenlied*, *Song of Roland*, and other European epics, with special emphasis on their relationship to and comparison with the Greek epic.

For Advanced Undergraduates and Graduates

Comp. Lit. 101. Introductory Survey of Comparative Literature (3)—First semester. (Zucker.)

Survey of the background of European literature through study of English translations of Greek and Latin literature. The debt of modern literature to the ancients is discussed and illustrated.

Comp. Lit. 102. Introductory Survey of Comparative Literature (3)—Second semester. (Zucker.)

Continuation of Comp. Lit. 101; study of medieval and modern Continental literature.

Comp. Lit. 103. The Old Testament as Literature (2)—Second semester. A study of the sources, development, and literary types. (Zucker.)

Comp. Lit. 104. Chaucer (3)—First semester.

Same as Eng. 104. (Harman.)

Comp. Lit. 105. Romanticism in France (3)—First semester.

Lectures and readings in the French romantic writers from Rousseau to Baudelaire. Texts are read in English translations. (Staff.)

Comp. Lit. 106. Romanticism in Germany (3)—Second semester.

Continuation of Comp. Lit. 105. German literature from Buerger to Heine in English translations. (Prahl.)

Comp. Lit. 107. The Faust Legend in English and German Literature (3)—First semester. (Prahl.)

A study of the Faust legend of the Middle Ages and its later treatment by Marlowe in *Dr. Faustus* and by Goethe in *Faust*.

Comp. Lit. 108. Some Non-English Influences on American Literature (3)—Second semester. (Zucker.)

Comparative study of European, chiefly French and German, and American writers, illustrating our literary debt to the Old World and original features of the New.

Comp. Lit. 109. Cervantes (3)—Second semester.

Same as Spanish 109.

Comp. Lit. 112. Ibsen (2)—First semester. (Zucker.)

A study of the life and chief works of Ibsen with special emphasis on his influence on the modern drama.

Comp. Lit. 113. Prose of the Renaissance (3)—Second semester.

Same as Eng. 113. (Zeeveld.)

Comp. Lit. 114. The Greek Drama (3)—First semester. (Prahl.)

The chief works of Aeschylus, Sophocles, Euripides, and Aristophanes in English translations. Emphasis on the historic background, on dramatic structure, and on the effect of the Attic drama upon the mind of the civilized world.

Comp. Lit. 121. Milton (3)—Second semester.

Same as Eng. 121. (Murphy.)

Comp. Lit. 129, 130. Literature of the Romantic Period (3, 3)—First and second semesters. (Weber.)

Same as Eng. 129, 130.

Comp. Lit. 144. Modern Drama (3)—First semester.

Same as Eng. 144. (Weber.)

Comp. Lit. 145. The Modern Novel (3)—Second semester.

Same as Eng. 145. (Bode.)

Comp. Lit. 155, 156. Four Major American Writers (3, 3)—First and second semesters.

Same as Eng. 155, 156. (Manning.)

For Graduates

Comp. Lit. 201. Bibliography and Methods (3)—First semester.

Same as Eng. 201. (Mooney.)

Comp. Lit. 202. The History of the Theater (3)—Second semester. Prerequisite, a wide acquaintance with modern drama and some knowledge of the Greek Drama. (Zucker.)

A detailed study of the history of the European theater. Individual research problems will be assigned for term papers.

Comp. Lit. 203. Schiller (3)—First semester.

Same as German 204. (Prah.)

Comp. Lit. 204. Medieval Romances (3)—Second semester.

Same as Eng. 204. (Cooley.)

Comp. Lit. 205. Georges Duhamel, Poet, Dramatist, Novelist (2, 2)—First and second semesters. (Falls.)

Same as French 203, 204.

Comp. Lit. 206, 207. Seminar in Sixteenth Century Literature (3, 3)—First and second semesters. (McManaway.)

Same as Eng. 206, 207.

Comp. Lit. 208. The Philosophy of Goethe's Faust (3)—First semester.

Same as German 208. (Zucker.)

Comp. Lit. 216, 217. Literary Criticism (3, 3)—First and second semesters.

Same as Eng. 216, 217. (Cardwell.)

Comp. Lit. 227, 228. Problems in American Literature (3, 3)—First and second semesters.

Same as Eng. 227, 228.

ENGLISH LANGUAGE AND LITERATURE

Professors Cardwell, Aldridge, Bode, Harman; Lecturer McManaway; Associate Professors Ball, Cooley, Murphy, Mooney, Weber, Zeeveld; Assistant Professors Andrews, Bryan, Coulter, Fleming, Gravely, Manning, Schaumann, Ward; Instructors Adams, Anderson, Bauer, Bezanson, Clees, Crafts, Demaree, Dinwiddie, Eisner, Fischer, Harwell, Hyde, Kahn, Kossoff, Le Bert, Mangold, Martin, C. P., Martin, M., Miller, Mish, Mooney, Moriarty, Mutch, Nethken, Portz, Robison, Roch, Seligmann, Sinclair, Stamper, Stevenson, Stone, Swarthout, Teeter, Tenney, Wittman; Graduate Assistants Adams, R., Barnes, Bradley, da Ponte, Fertig, Gray, Greenberg, Harmon, Kearney, McMurphy, Miller, H. W., Newcomb, Sachs, Thearle, Tuck.

Eng. 1, 2. Composition and American Literature (3, 3)—First and second semesters. Required of freshmen. Both courses offered each semester,

but may not be taken concurrently. Prerequisite, three units of high school English.

Grammar, rhetoric, and the mechanics of writing; frequent themes. Readings are in American literature.

Eng. 3, 4. Composition and World Literature (3, 3)—First and second semesters. Prerequisite, Eng. 1, 2. Eng. 3, 4, or Eng. 5, 6, or an acceptable combination of the two required of sophomores. Credit will not be given for more than six hours' of work in 3, 4 and 5, 6.

Practice in composition. An introduction to world literature, foreign classics being read in translation.

Eng. 5, 6. Composition and English Literature (3, 3)—First and second semesters. Prerequisite, Eng. 1, 2. Eng. 3, 4, or Eng. 5, 6, or an acceptable combination of the two required of sophomores. Credit will not be given for more than six hours of work in 3, 4 and 5, 6.

Practice in composition. An introduction to major English writers; several foreign classics are read in translation.

Eng. 7. Technical Writing (2)—First and second semesters. Prerequisite, Eng. 1, 2.

For students desiring practice in writing reports, technical essays, or popular essays on technical subjects. (Coulter, Bezanson, Le Bert.)

Eng. 8. College Grammar (3)—First and second semesters. Prerequisite, Eng. 1, 2.

An analytical study of Modern English grammar, with lectures on the origin and history of inflectional and derivational forms. (Harman.)

Eng. 9. Introduction to Narrative Literature (3)—Second semester. Prerequisite, Eng. 1, 2.

An intensive study of representative stories, with lectures on the history and technique of the short story and other narrative forms. (Harman.)

Eng. 12. Introduction to Creative Writing (2)—First and second semesters. Prerequisite, Eng. 1, 2.

Intended primarily for sophomores and juniors of demonstrated ability. (Swarthout.)

For Graduates and Advanced Undergraduates

Eng. 101. History of the English Language (3)—Second semester.

An historical and critical survey of the English language; its nature, origin, and development. (Harman.)

Eng. 102. Old English (3)—First semester.

Readings in Old English. The sounds, morphology, and syntax of Old English with particular reference to the development of Modern English.

(Ball.)

- Eng. 103. Beowulf (3)**—Second semester.
A literary and linguistic study of the Old English epic. (Ball.)
- Eng. 104. Chaucer (3)**—First semester.
A literary and language study of the *Canterbury Tales*, *Troilus and Criseyde*, and the principal minor poems. (Harman.)
- Eng. 106. English and Scottish Ballads (3)**—Second semester.
An introduction to the ballads in Child's edition. Attention given to analogues, imitations, American collections, and collecting. (Cooley.)
- Eng. 110, 111. Elizabethan and Jacobean Drama (3, 3)**—First and second semesters. Not offered in 1949-1950.
The most important dramatists of the time, other than Shakespeare. (Zeeveld.)
- Eng. 112. Poetry of the Renaissance (3)**—First semester.
The chief poets from Skelton to Jonson, with particular attention to Spenser. (Zeeveld.)
- Eng. 113. Prose of the Renaissance (3)**—Second semester.
The chief prose writers from More to Bacon. (Zeeveld.)
- Eng. 115, 116. Shakespeare (3, 3)**—First and second semesters.
Twenty-one important plays. (Zeeveld.)
- Eng. 120. English Drama from 1660 to 1800 (3)**—Second semester.
The important dramatists from Etherege to Sheridan, with emphasis upon the comedy of manners. (Weber.)
- Eng. 121. Milton (3)**—Second semester.
The poetry and the chief prose works. (Murphy.)
- Eng. 122. Literature of the Seventeenth Century, 1600-1660 (3)**—First semester.
The major non-dramatic writers (exclusive of Milton). (Murphy.)
- Eng. 123. Literature of the Seventeenth Century, 1660-1700 (3)**—Second semester.
The Age of Dryden, with the exception of the drama. (Aldridge.)
- Eng. 125, 126. Literature of the Eighteenth Century (3, 3)**—First and second semesters.
Special attention to major writers and to the historical and philosophical background. (Aldridge.)
- Eng. 129, 130. Literature of the Romantic Period (3, 3)**—First and second semesters.
In the first semester, the literature of revolt in England, with special attention to Wordsworth, Coleridge, Lamb, Hazlitt, and DeQuincey. In the second semester, special attention is given to Byron, Shelley, and Keats. (Weber.)

Eng. 134, 135. Literature of the Victorian Period (3, 3)—First and second semesters.

The chief writers of prose and poetry from the close of the romantic period to the end of the nineteenth century. (Cooley, Mooney.)

Eng. 139, 140. The English Novel (3, 3)—First and second semesters.

The development of the novel; readings in the major novelists of the eighteenth and nineteenth centuries. (Aldridge, Mooney.)

Eng. 143. Modern Poetry (3)—First semester.

The chief English, Irish, and American poets of the twentieth century. (Murphy.)

Eng. 144. Modern Drama (3)—First semester.

The drama from Ibsen to the present. (Weber.)

Eng. 145. The Modern Novel (3)—Second semester.

Major English and American novelists of the twentieth century. (Manning.)

Eng. 148. The Literature of American Democracy (3)—First semester.

Literature which relates closely to the democratic tradition. (Bode.)

Eng. 150, 151. American Literature to 1900 (3, 3)—First and second semesters.

Representative American poetry and prose from colonial times to 1900, with special emphasis on the literature of the nineteenth century.

(Gravely, Manning.)

Eng. 155, 156. Four Major American Writers (3, 3)—First and second semesters.

Two writers studied intensively each semester. (Manning, Bode.)

Eng. 157. Introduction to Folklore (3)—First semester.

Historical background of folklore studies; growth of the field; types of folklore. Emphasis upon American folklore: ballads; folk songs; folk tales; regional customs and beliefs. (Cooley.)

Eng. 170. Creative Writing (2)—First semester. Prerequisite, permission of the instructor.

Theory and practice. Intended for students who have more than ordinary ability. (R. Fleming.)

Eng. 171. Advanced Creative Writing (2)—Second semester. Prerequisite, permission of the instructor.

A high level of performance expected; some attention to forms not studied in English 170. (R. Fleming.)

Eng. 172. Playwriting (2)—Second semester. Prerequisite, permission of the instructor.

Analysis of plays, and practice in writing at least one short play.

(R. Fleming.)

For Graduates

Eng. 200—Research (3-6)—Arranged. Credit in proportion to work done and results accomplished. (Staff.)

Eng. 201. Bibliography and Methods (3)—First semester.

An introduction to the principles and methods of research. (Mooney.)

Eng. 202. Middle English (3)—First semester.

A study of selected readings of the Middle English period with reference to etymology, morphology, and syntax. (Harman.)

Eng. 203. Gothic (3)—Not offered in 1949-1950. .

Forms and syntax, with reading from the Ulfilas Bible; correlation of the Gothic speech sounds with those of Old English.

Eng. 204. Medieval Romances (3)—Not offered in 1949-1950.

The Middle English metrical and prose romances and their sources, with emphasis on the Arthurian cycle. (Cooley.)

Eng. 206, 207. Seminar in Renaissance Literature (3, 3)—First and second semesters. (McManaway.)

Eng. 210. Seminar in Seventeenth-Century Literature (3)—Second semester. (Murphy.)

Eng. 212, 213. Seminar in Eighteenth-Century Literature (3, 3)—First and second semesters. (Aldridge.)

Eng. 214, 215. Seminar in Nineteenth-Century Literature (3)—First and second semesters. (Cooley, Mooney, Weber.)

Eng. 216, 217. Literary Criticism (3, 3)—Not offered in 1949-1950.

The practice and theory of criticism from Plato to Croce. (Cardwell.)

Eng. 225, 226. Seminar in American Literature (3, 3)—First and second semesters. (Bode.)

Eng. 227, 228. Problems in American Literature (3, 3)—First and second semesters. (Cardwell.)

Eng. 230. Studies in American Language (3)—Not offered in 1948-1949.

Eng. 257. Problems in Folklore (3)—Second semester.

Advanced study in folklore with special attention to scholarly problems of collection, research, and classification. Intensive collection and analysis of regional folklore; review of folklore study in Europe, South America, and the United States.

GEOLOGY

Irwin C. Brown, Lecturer

Geol. 1. Geology (3)—Prerequisite, Chem. 1, 3.

A study dealing primarily with the principles of dynamical and structural geology. Designed to give a general survey of the rocks and minerals composing the earth; the movement within it, and its surface features and the agents that form them.

Geol. 2. Engineering Geology (2).

The fundamentals of geology with engineering applications.

HISTORY

Professors Gewehr, Chatelain, Prange, Wellborn; Associate Professors Bauer, Merrill; Assistant Professors Crosman, Gordon, Jashemski; Instructors Bates, Ferguson, Johnson, Lowitt, Sensenig, Sparks.

H. 1, 2. History of Modern Europe (3, 3)—First and second semesters. The basic course, prerequisite for all advanced courses in European History. A study of European History from the Renaissance to the present day.

(Bauer.)

H. 3, 4. History of England and Great Britain (3, 3)—First and second semesters. For freshmen and sophomores; open to upper classmen by special arrangement.

(Gordon.)

H. 5, 6. History of American Civilization (3, 3)—First and second semesters. Required for graduation of all students who enter the University after 1944-45. Normally to be taken in the sophomore year. See page 26. for further explanation.

(Staff.)

H. 51, 52. The Humanities (3, 3)—First and second semesters.

In surveying history from prehistoric times to the present, man's cultural development is emphasized. The course is a study of the achievements of the various civilizations which have contributed to the common cultural heritage of western civilization. The political, social and economic settings of the various civilizations are presented in chronological order. The characteristic achievements of each period in philosophy, religion, literature, art, science and music enrich this background. By presenting actual masterpieces in literature, art, and music, it is hoped that imagination, appreciation, and critical judgment will be stimulated. This course is designed as an introductory course in history which will make a more direct contribution to the other liberal art fields.

(Jashemski.)

For Graduates and Advanced Undergraduates**A. American History**

H. 101. American Colonial History (3)—First semester. Prerequisites, H. 5, 6, or the equivalent.

The settlement and development of colonial America to the middle of the eighteenth century. (Ferguson.)

H. 102. The American Revolution (3)—Second semester. Prerequisites, H. 5, 6, or the equivalent.

The background and course of the American Revolution through the formation of the Constitution. (Ferguson.)

H. 105, 106. Social and Economic History of the United States to 1860 (3, 3)—(Not offered in 1949-1950)—First and second semesters. Prerequisites, H. 5, 6, or the equivalent.

A synthesis of American Life from the colonial period to the Civil War.

H. 107. Social and Economic History of the United States, 1860-1900 (3)—First semester. Prerequisites, H. 5, 6, or the equivalent.

The development of American life and institutions, with emphasis upon the period since 1876. (Chatelain.)

H. 108. Social and Economic History of the United States, since 1900 (3)—Second semester. Prerequisites, H. 5, 6, or the equivalent.

A study of the outstanding social and economic problems and of the cultural changes of 20th Century America. (Chatelain.)

H. 115. The Old South (3)—First semester. Prerequisites, H. 5, 6, or the equivalent.

A study of the institutional and cultural life of the ante-bellum South with particular reference to the background of the Civil War. (Merrill.)

H. 116. The Civil War and Reconstruction (3)—Second semester. Prerequisites, H. 5, 6, or the equivalent.

Military aspects; problems of the Confederacy; political, social, and economic effects of the war upon American society. Post-bellum problems of reconstruction in North and South. (Merrill.)

H. 118, 119. Recent American History (3, 3)—First and second semesters. Prerequisites, H. 5, 6, or the equivalent.

Party politics, domestic issues, foreign relations of the United States since 1890. First semester, through World War I. Second semester, since World War I. (Merrill.)

H. 121, 122. History of the American Frontier (3, 3)—First and second semesters. Prerequisites, H. 5, 6, or the equivalent.

A study of the influence of the westward movement in shaping American institutional development. First semester, the trans-Alleghany West; second semester, the trans-Mississippi West. (Gewehr.)

H. 127, 128. Diplomatic History of the United States (3, 3)—First and second semesters. Prerequisites, H. 5, 6, or the equivalent.

An historical study of the diplomatic negotiations and foreign relations of the United States. First semester, from the Revolution to the Civil War; second semester, from the Civil War to the present. (Wellborn.)

H. 129. The United States and World Affairs (3)—Second semester. Prerequisites, H. 5, 6, or the equivalent.

A consideration of the changed position of the United States with reference to the rest of the world since 1917. (Wellborn.)

H. 130. Territorial Dependencies of the United States (2).

Acquisition of our insular and territorial possessions; political evolution; economic, social and cultural problems; present status and outlook. (Wellborn.)

H. 133, 134. The History of American Ideas (3, 3)—First and second semesters. Prerequisites, H. 5, 6, or the equivalent.

An intellectual history of the American people, embracing such topics as religious liberty, democracy, and social ideas. (Johnson.)

H. 135, 136. Constitutional History of the United States (3, 3)—First and second semesters. Prerequisites, H. 5, 6, or the equivalent.

A study of the historical forces resulting in the formation of the Constitution, and the development of American constitutionalism in theory and practice thereafter. (Gewehr.)

H. 141, 142. History of Maryland (3, 3)—(Not offered in 1949-1950)—First and second semesters. Prerequisites, H. 5, 6, or the equivalent.

First semester, a survey of the political, social and economic history of colonial Maryland. Second semester, Maryland's historical development and role as a state in the American Union.

H. 145, 146. Latin-American History (3, 3)—First and second semesters. Prerequisites, 6 hours of fundamental courses.

A survey of the history of Latin America from colonial origins to the present, covering political, cultural, economic, and social development, with special emphasis upon relations with the United States. (Crosman.)

H. 147. History of Mexico (3)—First semester.

The history of Mexico with special emphasis upon the independence period and upon relations between ourselves and the nearest of our Latin-American neighbors. (Crosman.)

B. European History

H. 151. History of the Ancient Orient and Greece (3)—First semester.

A survey of the ancient empires of Egypt, the Near East, and Greece with particular attention to their institutions, life and culture. (Jashemski.)

H. 153. History of Rome (3)—Second semester.

A study of Roman civilization from the earliest beginnings through the Republic and down to the last centuries of the Empire. (Jashemski.)

H. 155. Medieval Civilization (3)—First semester. Prerequisites, H. 1, 2, or H. 3, 4, or the permission of the instructor.

A survey of Medieval life, culture and institutions from the fall of the Roman Empire to the thirteenth century. (Jashemski.)

H. 161. The Renaissance and Reformation (3)—Second semester. Prerequisites, H. 1, 2, or H. 3, 4, or the permission of the instructor.

The culture of the Renaissance, the Protestant revolt and Catholic reaction through the Thirty Years War. (Jashemski.)

H. 166. Revolutionary and Napoleonic Europe (3)—Second semester. Prerequisites, H. 1, 2, or H. 3, 4.

The Old Régime in France and Europe; the changes effected by the French Revolution; the Napoleonic regime and the balance of power 1789-1815. (Bauer.)

H. 171, 172. Europe in the Nineteenth Century, 1815-1919 (3, 3)—First and second semesters. Prerequisites, H. 1, 2, or H. 3, 4.

A study of the political, economic, social and cultural development of Europe from the Congress of Vienna to the First World War. (Bauer.)

H. 175, 176. Europe in the World Setting of the Twentieth Century (3, 3)—First and second semesters. Prerequisites, H. 1, 2, or H. 3, 4.

A study of political, economic, and cultural developments in twentieth century Europe with special emphasis on the factors involved in the two World Wars and their global impacts and significance. (Prange.)

H. 179, 180. Diplomatic History of Europe Since 1871 (3, 3)—First and second semesters. Prerequisites, H. 1, 2, or H. 3, 4.

A study of European diplomacy, imperialism and power politics since the Franco-Prussian War. (Prange.)

H. 181, 182. History of Central Europe (3, 3)—First and second semesters. Prerequisites, H. 1, 2, or H. 3, 4.

The history of Central Europe from 1600 to the present, with special emphasis on Germany and Austria. (Prange.)

H. 185, 186. History of the British Empire (3, 3)—First and second semesters. Prerequisites, H. 1, 2, or H. 3, 4.

First semester, the development of England's Mercantilist Empire and its fall in the war for American Independence (1783); second semester, the rise of the Second British Empire and the solution of the problem of responsible self-government, 1783-1867; the evolution of the British Empire into a Commonwealth of Nations, and the development and problems of the dependent Empire. (Gordon.)

H. 187. History of Canada (3)—Second semester. Prerequisites, H. 1, 2, or H. 3, 4.

A history of Canada, with special emphasis on the nineteenth century and upon Canadian relations with Great Britain and the United States.

H. 191. History of Russia (3)—First semester. Prerequisites, H. 1, 2, or the equivalent.

A history of Russia from the earliest times to the present day. (Bauer.)

H. 192. Foreign Policy of the USSR (3)—Second semester. Prerequisite, H. 191.

A survey of Russian foreign policy in the historical perspective, with special emphasis on the period of the USSR. Russian aims, expansion, and conflicts with the western powers in Europe, the Near and Middle East, and the Far East will be studied. (Bauer.)

H. 193. History of the Near East (3)—First semester. Prerequisites, H. 1, 2, or H. 3, 4.

A study of the Balkans and of Turkey from earliest times to the present. (Gewehr.)

H. 195. The Far East (3)—Second semester.

A survey of institutional, cultural and political aspects of the history of China and Japan, and a consideration of present-day problems of the Pacific area. (Gewehr.)

H. 199. Proseminar in Historical Writing (3)—Second semester.

Discussions and term papers designed to acquaint the student with the methods and problems of research and presentation. The students will be encouraged to examine those phases of history in which they are most interested. Required of history majors in senior year. (Sparks.)

For Graduates

H. 200. Research (3-6)—Credit proportioned to amount of work. Arranged.

H. 201. Seminar in American History (3)—First and second semester. (Chatelain.)

H. 205, 206. Topics in American Economic and Social History (3, 3)—First and second semesters.

Readings and conferences on the critical and source materials explaining our social and economic evolution. (Chatelain.)

H. 208. Topics in Recent American History (3)—First and second semesters.

Selected readings, research and conferences on important topics in United States History from 1900 to the present. (Merrill.)

H. 211. The Colonial Period in American History (3)—First semester.

Readings and conferences designed to familiarize the student with some of the sources and the classical literature of American Colonial History. (Ferguson.)

H. 212. Period of the American Revolution (3)—Second semester.

Readings and conferences designed to familiarize the student with some of the critical literature and sources of the period of the American Revolution. (Ferguson.)

H. 215. The Old South (3)

Readings and conferences designed to familiarize the student with some of the standard sources and the classical literature of the ante-bellum South. (Merrill.)

H. 216. The American Civil War (3)

Readings and conferences on the controversial literature of the Civil War. Attention is focused upon the conflicting interpretations and upon the social and economic impact of the war on American society. Opportunity is also given to read in the rich source material of this period. (Merrill.)

H. 217. Reconstruction and Its Aftermath (3)

A seminar on problems resulting from the Civil War. Political, social, and economic reconstruction in South and North; projection of certain post-war attitudes and problems into the present. (Merrill.)

H. 221, 222. History of the West (3, 3)—First and second semesters.

Readings and conferences designed to give the student an acquaintance with some of the more important sources and some of the most significant literature of the advancing American frontier. (Gewehr.)

H. 233, 234. Topics in American Intellectual History (3, 3)

Readings and conferences on selected phases of American thought, with emphasis on religious traditions, social and political theory, and development of American ideas. (Johnson.)

H. 235. Problems in American Constitutional History (3)—First and second semesters.

Research in selected problems of constitutional history with much attention to bibliography. (Gewehr.)

H. 250. Seminar in European History (3)—First and second semesters. (Staff.)**H. 255. Medieval Culture and Society (3)**

Readings and conferences designed to acquaint the student with the important literature and interpretations on such topics as feudalism, the medieval Church, schools and universities, Latin and vernacular literature, art and architecture. (Jashemski.)

H. 281. Topics in the History of Central Europe (3)

Readings and conferences in the history of Central Europe from Bismarck to the present, to acquaint the student with the leading primary and secondary sources. Special emphasis will be placed on the Bismarckian and Hitlerian periods. (Prange.)

H. 285, 286. Topics in the History of Modern England and Greater Britain (3, 3)

Readings and conferences on the documentary and literary materials dealing with the transformation of England and the growth and evolution of the British Empire since 1763. (Gordon.)

H. 287. Historiography (3)—Arranged.

Readings and occasional lectures on the historical writing, the evolution of critical standards, the rise of auxiliary sciences, and the works of selected masters. (Sparks.)

JOURNALISM

Professor Bryan; Lecturer Hottel; Instructors Estabrook, Kahl, Lambeth, and Wood.

Journ. 10. News Reporting, I (3)—First and second semesters. Two lectures and one laboratory period each week. Prerequisite, Eng. 1, 2 and permission of instructor.

Practice in writing and analyzing straight news stories; fundamentals of reporting.

Journ. 11. News Reporting, II (3)—First and second semesters. Two lectures and one laboratory period each week. Prerequisite, Journ. 10 or permission of instructor.

Practice in writing and analyzing the more specialized types of news stories; principles of journalism. (Bryan and Staff.)

Journ. 160. News Editing, I (3)—First semester. Two lectures and one laboratory period each week. (Wood.)

Journ. 161. News Editing, II (3)—First semester. Two lectures and one laboratory period each week. (Wood.)

Journ. 164. Magazine Writing (3)—First semester. Two lectures and one laboratory period each week.

Analysis of contemporary magazines; practice in writing articles, short stories, and fillers for publication. (Bryan.)

Journ. 165. Feature Article Writing (3)—Second semester. Two lectures and one laboratory period each week.

A continuation of Journalism 164 with more stress on production of feature articles for publication in newspapers or magazines. (Bryan.)

Journ. 174. Editorial Writing (3)—First semester. Two lectures and one laboratory period each week. Prerequisite, Journ. 11.

Class conducted as an editorial council; writing of editorials as summations of careful investigation and well-considered discussion; editorial practices of small, medium and large newspapers. (Estabrook.)

Journ. 175. Reporting of Public Affairs (3)—Second semester. Two lectures and one laboratory period each week.

Advanced reporting for newspapers and magazines on activities of legislatures, government bureaus, courts and other bodies or organizations concerned with the public interest. (Wood.)

Journ. 176. Evaluation of Current Journalistic Practice (3)—Second semester. Prerequisite, Journ. 161 or permission of instructor.

Findings of recent studies in readability, range and depth of reader interest, vocabulary, pictorialization, format and layout; effect of these findings on magazine and newspaper practice. (Bryan.)

LANGUAGES AND LITERATURES, FOREIGN

Professors Zucker, Falls, Prael; Associate Professors Kramer, Cunz, Quynn,¹ Bingham; Assistant Professors Parsons, Schweizer, Rand, Rosenfield, Hammerschlag; Adjunct Professor Juan Ramón Jiménez; Instructors Zenobia Jiménez, Dobert, Smith, Gilbert, Nemes, deMarne, Howe, Norton, Sedwick, Stevens, Tuck, Myer, Vent; Part-time Instructors Greenberg, Boborykine, Margaretten.

At the beginning of each semester a placement examination is given for all students who have had some foreign language in high school and wish to do further work in that language. By this means the Department assigns each student to the suitable level of instruction.

French

French 1, 2. Elementary French (3,3)—First and second semesters. Students who offer two units in French for entrance, but whose preparation is not adequate for second-year French, receive half credit for this course.

Elements of grammar; pronunciation and conversation; exercises in composition and translation.

French 3. Elementary Conversation (1)—First and second semesters. Prerequisite, the grade of A or B in French 1. Qualified students who are interested in French should take this course in conjunction with French 2.

A practice course in simple, spoken French.

French 4, 5. Intermediate Literary French (3,3)—First and second semesters. Prerequisite, French 1 and 2 or equivalent. Second-year French for students interested in literature or in fields related to literature. Students who expect to do major or minor work in French are required, however, to take French 17 in place of the second semester of this course.

Translation; conversation; exercises in pronunciation. Reading of texts designed to give some knowledge of French life, thought, and culture.

1. With the Graduate Year Abroad in Paris

French 6, 7. Intermediate Scientific French (3, 3)—First and second semesters. Prerequisite, French 1 and 2 or equivalent. Second-year French for students specializing in the sciences. Students who expect to do major or minor work in French are required, however, to take French 17 in place of the second semester of this course.

Translation; conversation; exercises in pronunciation. Reading of scientific texts.

French 8, 9. Intermediate Conversation (2, 2)—First and second semesters. Prerequisite, consent of instructor.

Practical exercises in conversation, based on material dealing with French life and customs.

French 17. Grammar Review (3)—First and second semesters. Prerequisite, French 4, French 6, or permission of instructor. This course gives the same credit as do French 5 and French 7, and may be taken in place of these courses. Required of second-year French students who expect to major or minor in French.

An intensive review of the elements of French grammar; verb drills; composition; conversation.

For Advanced Undergraduates

French 51, 52. The Development of the French Novel (3, 3)—First and second semesters.

Introductory study of the history and growth of the novel in French literature; of the lives, works, and influence of important novelists. Reports. French 51 covers the 17th and 18th centuries, French 52 the 19th century.

French 53, 54. The Development of the French Drama (3, 3)—First and second semesters.

Introductory study of the French drama. Translation, collateral reading, reports. French 53 covers the seventeenth and eighteenth centuries, French 54 the 19th century.

French 55, 56. The Development of the Short Story in French (3, 3)—First and second semesters.

A study of the short story in French literature; reading and translation of representative examples.

French 61, 62. French Phonetics (2, 2)—First and second semesters. Prerequisite, French 1 and 2.

A practical course in the pronunciation of French: study of phonetics, oral exercises and ear training.

French 71, 72. Intermediate Grammar and Composition (3, 3)—First and second semesters. Prerequisite, French 17 or equivalent.

This course, more advanced than the Grammar Review (French 17), is designed for students who, having a good general knowledge of French, wish to become more proficient in the written and spoken language.

French 75, 76. Introduction to French Literature (3, 3)—First and second semesters. Prerequisite, second-year French or equivalent.

An elementary survey of the chief authors and movements in French literature.

French 80, 81. Advanced Conversation (3, 3)—First and second semesters. Prerequisite, consent of the instructor.

This course is intended for students who have a good general knowledge of French, and who wish to develop fluency and confidence in speaking the language.

French 99. Rapid Review of the History of French Literature (1)—Second semester.

Weekly lectures stressing the high points in the history of French literature. This course provides a rapid review for majors by means of a brief survey of the entire field.

For Graduates and Advanced Undergraduates

French 100. French Literature of the Sixteenth Century (3)—First semester.

The beginning and development of the Renaissance in France.

French 101, 102. French Literature of the Seventeenth Century (3, 3)—First semester and second semester.

First semester, a survey of the great classical writers including Corneille and Racine. Second semester, devoted chiefly to Molière.

French 103, 104. French Literature of the Eighteenth Century (3, 3)—First and second semesters.

First semester, a study of the drama, poetry, and novels of the period. Second semester, the philosophical and scientific movement from Saint-Evremond and Bayle to the French Revolution.

French 105, 106. French Literature of the Nineteenth Century (3, 3)—First semester, drama and poetry from Romanticism to Symbolism to the present time. Second semester, the major prose writers of the same period.

French 107, 108. French Literature of the Twentieth Century (3, 3)—First and second semesters.

First semester, drama and poetry from symbolism to the present time. Second semester, the contemporary novel.

French 121, 122. Advanced Composition (3, 3)—First and second semesters. Translation from English to French, free composition, and letter writing.

French 161, 162. French Life and Culture (3, 3)—First and second semesters.

An introductory study of the French people: their life and customs, their great men and women, their educational, literary and artistic tradition.

For Graduates

The requirements of students will determine which courses will be offered.

French 201. Research—Credits determined by work accomplished.

French 203, 204. Georges Duhamel, Poet, Dramatist, Novelist (2, 2)—
First and second semesters. (Falls.)

French 205, 206. French Literature of the Middle Ages (2, 2)—First and
second semesters.

French 207, 208. The French Novel in the First Half of the Nineteenth
Century (2, 2)—First and second semesters. (Falls.)

French 209, 210. The French Novel in the Second Half of the Nineteenth
Century (2, 2)—First and second semesters. (Falls.)

French 211. Introduction to Old French (3)—Second semester.

French 213, 214. Seminar (2, 2)—First and second semesters.

Required of all graduate students in French.

French 215, 216. Moliere (2, 2). (Quynn.)

French 221, 222. Reading Course (2, 2)—One conference a week, first
and second semester.

German

German 0. Intensive Elementary German (0).

Intensive elementary course in the German language designed particu-
larly for graduate students who wish to acquire a reading knowledge.

(Hammerschlag.)

German 1, 2. Elementary German (3, 3)—First and second semesters.
Students who offer two units in German for entrance, but whose preparation
is not adequate for second-year German, receive half credit for this course.

German 3. Elementary Conversation (1)—First and second semesters.
Prerequisite, the grade of A or B in German 1.

German 4, 5. Intermediate Literary German (3, 3)—First and second
semesters. Prerequisite, German 1, 2, or equivalent.

Reading of narrative prose, grammar review, and oral and written
practice.

German 6, 7. Intermediate Scientific German (3, 3)—First and second
semesters.

Reading of technical prose, with some grammar review.

German 8, 9. Intermediate Conversation (2, 2)—First and second semes-
ters. Admission by consent of instructor.

The object of this course is to help the student acquire the ability to
speak and understand simple colloquial German.

German 17. Grammar Review (3)—First and second semester. Prerequisite, German 4 of 6 or permission of instructor. May be taken in place of German 5 or 7.

For students who wish to major or minor in German.

For Advanced Undergraduates

German 61, 62. German Phonetics (1, 1)—First and second semesters. Prerequisite, German 1, 2, or equivalent.

German 71, 72. German Grammar and Composition (3, 3)—First and second semesters. Prerequisite, German 4, 5, or equivalent.

A thorough study of the more detailed points of German grammar with ample practice in composition work. This course is required of students preparing to teach German.

German 75, 76. Introduction to German Literature (3, 3)—First and second semesters. Prerequisite, German 4, 5, or equivalent.

An elementary survey of the history of German literature.

German 80, 81. Advanced Conversation (3, 3)—First and second semesters. Prerequisite, consent of instructor.

Intensive drill in the spoken language.

German 99. Rapid Review of the History of German Literature (1)—First and second semesters.

Weekly lectures stressing the high points in the history of German literature, art, and music. Rapid review for majors.

For Advanced Undergraduates and Graduates

German 101, 102. German Literature of the Eighteenth Century (3, 3)—First and second semesters.

The earlier and the later classical periods. (Prahl.)

German 103, 104. German Literature of the Nineteenth Century (3, 3)—First and second semesters.

Romanticism and young Germany. (Prahl.)

German 105, 106. Contemporary German Literature (3, 3)—First and second semesters.

The literature of the Empire and of the Twentieth Century. (Prahl.)

German 107, 108. Goethe's Faust (2, 2)—First and second semesters. First and second parts of the drama. (Zucker.)

Attention is called to Comparative Literature 106, Romanticism in Germany, and Comparative Literature 107, The Faust Legend in English and German Literature.

German 121, 122. Advanced Composition (3, 3)—First and second semesters. Prerequisite, German 71, 80 or consent of instructor.

Translation from English and German, free composition, and letter writing.

German 161, 162. German Life and Culture (3, 3)—First and second semesters. (Cunz.)

Introductory study of the literary, educational, artistic tradition, great men, customs and general culture.

For Graduates

(The requirements of students will determine which courses will be offered.)

German 201. Research—Credits determined by work accomplished.

German 202, 203. The Modern German Drama (3, 3)—First and second semesters. (Zucker.)

German 204. Schiller (3)—First semester.

German 205. Goethe's Works outside of Faust (2)—Second semester.

German 206. The Romantic Movement (3)—Second semester.

German 208. The Philosophy of Goethe's Faust (3)—First semester.

German 210. Seminar (3, 3)—First and second semester.

Required of all graduate students in German. (Zucker.)

German 220, 221. Reading Course (2, 2)—First and second semesters.

Designed to give the graduate student the background of a survey of German literature. Extensive outside readings with reports and connecting lectures.

German 230. Introduction to European Linguistics (3)—First semester.

German 231. Middle High German (3)—Second semester.

Spanish

Spanish 1, 2. Elementary Spanish (3, 3)—First and second semester.

Students who offer two units in Spanish for entrance, but whose preparation is not adequate for second-year Spanish, receive half credit for this course.

Spanish 3. Elementary Conversation (1)—First and second semesters. Prerequisite, the grade of A or B in Spanish 1.

A practice course in simple, spoken Spanish.

Spanish 4, 5. Intermediate Spanish (3, 3)—First and second semesters. Prerequisite, Spanish 1, 2, or equivalent. Students who do major or minor work in Spanish are advised to take Spanish 17 in place of the second semester of this course.

Translation, grammar review, exercise in pronunciation. Reading of texts designed to give some knowledge of Spanish and Latin-American life, thought, and culture.

Spanish 6, 7. Business Spanish (3, 3)—First and second semesters. Prerequisite, consent of instructor, Spanish 1 and 2 or equivalent.

A second-year course designed to give a knowledge of correct Spanish business usage.

Spanish 8, 9. Intermediate Conversation (2, 2)—First and second semesters. Admission by consent of instructor.

The object of this course is to help the student acquire the ability to speak and understand everyday and colloquial Spanish.

Spanish 17. Grammar Review (3)—First and second semesters. Prerequisite Spanish 4 or consent of instructor. Designed particularly for students who enter with three or more units in Spanish, who expect to do advanced work in the Spanish language and literature, but who are not prepared to take Spanish 71. May be taken in place of Spanish 5 or 7.

An intensive review of the elements of the Spanish grammar, verb drills, composition.

Spanish 61, 62. Spanish Phonetics (1, 1)—First and second semesters. Prerequisite, Spanish 1, 2, or equivalent, or consent of instructor.

A practical course in the pronunciation of Spanish; study of phonetics, oral exercises and ear training.

Spanish 71, 72. Review Grammar and Composition (3, 3)—First and second semester. Prerequisite, Spanish 4, 5, or equivalent.

This course is more advanced than Spanish 17 and is designed to give the students a thorough training in the structure of the language. It is also intended to give an intensive and practical drill in Spanish composition.

Spanish 75, 76. Introduction to Spanish Literature (3, 3)—First and second semesters. Prerequisite, Spanish 4, 5, or equivalent.

An elementary survey of the history of Spanish literature.

Spanish 80, 81. Advanced Conversation (3, 3)—First and second semesters. Prerequisite, Spanish 8, 9, or consent of instructor. This course is more advanced than Spanish 8 and 9 and is intended to give the students the ability to speak fluently about subjects of general interest.

Spanish 99. Rapid Review of the History of Spanish Literature (1)—Second semester.

Weekly lectures stressing the leading concepts in the history of Spanish Literature. Especially designed for majors.

For Graduates and Advanced Undergraduates

Spanish 101. Epic and Ballad (3)—First semester.

The legends and heroic matter of Medieval Spain.

Spanish 104. The Drama of the Golden Age (3)—First semester.

Spanish 105. The Spanish Novel of the Golden Age (3)—Second semester.

- Spanish 106. **The Poetry of the Golden Age (3)**—First semester.
- Spanish 107. **The Spanish Mystics (3)**—Second semester.
- Spanish 108. **Lope de Vega (3)**—First semester.
- Spanish 109. **Cervantes (3)**—Second semester.
- Spanish 110. **The Poetry of the XIXth Century (3)**—First semester.
- Spanish 111. **The Novel of the XIXth Century (3)**—Second semester.
- Spanish 112. **The Drama of the XIXth Century (3)**—Second semester.
- Spanish 113. **The Novel of the XXth Century (3)**—First semester.
- Spanish 114. **The Poetry of the XXth Century (3)**—First semester.
- Spanish 115. **Spanish Thought in the XXth Century (3)**—First semester.
Essays and critical writings of the XXth Century. The Generation of 1898.
- Spanish 116. **The Drama of the XXth Century (3)**—Second semester.
- Spanish 121, 122. **Advanced Composition (3,3)**—First and second semester.
Translation from English to Spanish, free composition, letter writing.
- Spanish 151. **Latin-American Novel (3)**—First semester.
- Spanish 152. **Latin-American Poetry (3)**—Second semester.
- Spanish 153. **Latin-American Essay (3)**—First semester.
- Spanish 161, 162. **Spanish Life and Culture (3, 3)**—First and second semesters.
Introductory study of the literary, educational, artistic traditions, great men, customs and general culture.
- Spanish 163, 164. **Latin-American Civilization (3, 3)**—First and second semesters.
Introductory study of the geography, history, government, economics, literature and thought. Offered in conjunction with staff members from the Departments of Geography, History, and Government and Politics.

For Graduate Students

- Spanish 201. **Research**—Credits determined by work accomplished.
- Spanish 202. **The Golden Age in Spanish Literature (3)**—First semester.
- Spanish 203, 204. **Spanish Poetry (3, 3)**—First and second semesters.
- Spanish 210. **Seminar**—(Arranged.)
- Spanish 213. **Introduction to Old Spanish (3)**—Second semester.
- Spanish 221, 222. **Reading Course**—(Arranged.)

French (see page 192).

Hebrew

Hebrew 1, 2. Elementary Hebrew (3, 3)—First and second semesters.

Elements of grammar; pronunciation and conversation; exercises in composition and translation.

Hebrew 3. Elementary Conversation (1)—First semester. Prerequisite, Hebrew 1 and consent of instructor.

A practice course in spoken Hebrew.

Hebrew 4, 5. Intermediate Hebrew (3, 3)—First and second semesters. Prerequisite, Hebrew 1 and 2, or equivalent.

Translation; conversation; exercises in pronunciation. Reading of texts designed to give some knowledge of Hebrew life, thought, and culture.

Hebrew 8. Intermediate Hebrew Conversation (2). Prerequisite, consent of instructor.

A practice course in intermediate-level spoken Hebrew. (Greenberg.)

Hebrew 75, 76. Introduction to Hebrew Literature (3, 3)—First and second semesters. Prerequisite, second-year Hebrew or equivalent and consent of instructor.

A survey of Hebrew literature.

Italian

Italian 1, 2. Elementary Italian (3, 3)—First and second semesters.

Open to freshmen. Also recommended for advanced students in French and Spanish.

Elements of grammar; pronunciation and conversation; exercises in composition and translation.

Italian 3. Elementary Conversation (1)—First and second semesters. Prerequisite, the grade of A or B in Italian 1.

A practice course in simple, spoken Italian.

Portuguese

Portuguese 1, 2. Elementary Portuguese (3, 3)—First and second semesters.

Drill in pronunciation and in the elements of grammar; composition and translation.

Portuguese 3. Elementary Conversation (1)—Prerequisite, the grade of A or B in Portuguese 1. Qualified students who are interested in Portuguese should take this course in conjunction with Portuguese 2.

A practice course in simple, spoken Portuguese.

Russian

Russian 1, 2. Elementary Russian (3, 3)—First and second semesters. Elements of grammar; composition; pronunciation and translation.

Russian 3. Elementary Conversation (1)—Prerequisite, the grade of A or B in Russian 1. Qualified students who are interested in Russian should take this course in conjunction with Russian 2.

Russian 4, 5. Intermediate Russian (3, 3)—First and second semesters. Prerequisite, Russian 1 and 2, or equivalent.

Translation; conversation; exercises in pronunciation. Reading of texts designed to give some knowledge of Russian life, thought, and culture.

Russian 8, 9. Intermediate Conversation (2, 2)—First and second semesters. Admission by consent of instructor.

A practice course in spoken Russian.

Russian 75, 76. Introduction to Russian Literature (3, 3)—First and second semesters. Prerequisite, second-year Russian or equivalent and consent of instructor.

A survey of Russian literature.

LIBRARY SCIENCE

Associate Professor Rovelstad; Instructors Baehr, Holladay, Phillips, Turner and Urban

L. S. 1, 2. Library Methods (1, 1)—First and second semesters.

This course is intended to help students to use libraries with greater facility and effectiveness. Instruction, given in the form of lectures and practical work, is designed to interpret the library and its resources to the students. The course considers the classification of books in libraries, the card catalog, periodical literature and indexes, and certain essential reference books which will be found helpful throughout the college course and in later years.

L. S. 101. School Library Administration (2)—First semester.

The organization and maintenance of effective library service in the modern school. Planning and equipping library quarters, purpose of the library in the school, standards, instruction in the use of books and libraries, training student assistants, acquisition of materials, repair of books, publicity, exhibits and other practical problems.

L. S. 102. Cataloging and Classification (2)—Second semester. One lecture; one two-hour laboratory.

Study and practice in classifying books and making dictionary catalog for school libraries. Simplified forms as used in the Children's Catalog, Standard Catalog for High School Libraries, and Wilson printed cards are studied.

L. S. 103. Book Selection for School Libraries (3)—First semester.

Principles of book selection as applied to school libraries. Practice in the effective use of book selection aids and in the preparation of book lists. Evaluation of publishers, editions, translations, format, etc.

MATHEMATICS

Professors Martin, Hall, Jackson, Weinstein;* Associate Professors Vander-slice, Truesdell;* Assistant Professors Brigham, Good, Leutert; Lecturers Barker, Harkin, Marston, Rigby, van Tuyl, Watanabe, Wehausen; Instructors Boyer, Brandt, Brewster, Dantzig, Dare,* Eakens, Gorciu, Holland, Jamieson,* McLean, Meals, Menneken, Rankin, Shepherd, Stephens, Thorpe, Wagner, and Waters.

The Mathematics Club meets once a month under the direction of Professor Jackson for the discussion of mathematical topics of interest to the undergraduate.

The following courses are open to students who offer one unit of algebra for entrance: Math. 1, 5, or 10.

* The following courses are open to students who offer two or more units of algebra for entrance: Math. 14, 15.

Students are enrolled in Math. 5, 10, or 15 provided they pass the Mathematics section of the general classification test given to incoming students during registration. Students who fail this test should enroll in Math. 0 if their curriculum calls for Math. 5 or 10, and in Math. 1 if their curriculum calls for Math. 15. Students taking Math. 1 are not eligible to take Math. 14 concurrently.

In general students should enroll in only one course in the groups below. In case this rule is not followed credit will be assigned as indicated.

Math. 5, 10, 15. Credit for only one course.

Math. 11, 14. Math. 11—1½ credits; Math. 14—2 credits.

Math. 11, 17. Math. 11—1½ credits; Math. 17—4 credits.

The department strongly recommends that a student who receives a grade of D in a course in mathematics repeat the course to raise his grade before going on to a more advanced course.

Math. 0. Basic Mathematics (0)—First and second semesters. Required of students whose curriculum calls for Math. 5 or 10 and who fail the qualifying examination for these courses.

The fundamental principles of algebra.

Math. 1. Introductory Algebra (0)—First and second semesters. Prerequisite, one unit of algebra. Required of students whose curriculum calls for Math. 15 and who fail the qualifying examination for this course.

A review of the topics covered in a second course in algebra.

* Part time.

Math. 2. Solid Geometry (0)—First and second semesters. Prerequisite, plane geometry. Open to students who enter deficient in solid geometry.

Lines, planes, cylinders, cones, the sphere and polyhedra, primary emphasis on mensuration. Intended for engineers and science students.

Math. 5. General Mathematics (3)—First and second semesters. Prerequisite, one unit of algebra. Open only to students in the College of Business and Public Administration, the College of Agriculture, and the Department of Industrial Education.

Fundamental operations, ratio and proportion, percentage, simple interest, linear and quadratic equations, exponents and radicals, logarithms, the slide rule, functions and graphs, progressions, binomial theorem.

Math. 6. Mathematics of Finance (3)—First and second semesters. Prerequisite, Math. 5, or equivalent. Open only to students in the College of Business and Public Administration.

Simple and compound interest, discount, amortization, sinking funds, valuation of bonds, depreciation, annuities, and insurance.

Math. 10. Algebra (3)—First and second semesters. Prerequisite, one unit each of algebra and plane geometry. Open to biological, premedical, preidental, and general Arts and Science students.

Fundamental operations, factoring, fractions, linear equations, exponents and radicals, logarithms, quadratic equations, variation, binomial theorem, theory of equations.

Math. 11. Trigonometry and Analytic Geometry (3)—First and second semesters. Prerequisite, Math. 10 or equivalent. Open to biological, premedical, preidental, and general Arts and Science students. This course is not recommended for students planning to enroll in Math. 20.

Trigonometric functions, identities, addition formulas, solution of triangles, coordinates, locus problems, the straight line and circle, conic sections, graphs.

Math. 13. Elements of Mathematical Statistics (3)—First semester. Prerequisite, one of Math. 5, 10, 15.

Frequency distributions, averages, moments, measures of dispersion, the normal curve, curve fitting, regression and correlation.

Math. 14. Plane Trigonometry (2)—First and second semesters. Prerequisite, Math. 15 or concurrent enrollment in Math. 15. Open to students in engineering, education, and the physical sciences.

Trigonometric functions, identities, the radian, graphs, addition formulas, solution of triangles, trigonometric equations.

Math. 15. College Algebra (3)—First and second semesters. Prerequisite, high school algebra completed, and Plane Geometry. Open to students in engineering, education, and the physical sciences.

Fundamental operations, variation, functions and graphs, quadratic equations, theory of equations, binomial theorem, complex numbers, logarithms, determinants, progressions.

Math. 16. Spherical Trigonometry (2)—First and second semesters. Prerequisites, solid geometry and plane trigonometry.

The solution of spherical triangles, with applications to the terrestrial and astronomical triangles.

Math. 17. Analytic Geometry (4)—Three lectures and two one-hour laboratory periods a week, first and second semesters. Prerequisite, **Math. 14** and **15**, or equivalent. Open to students in engineering, education, and the physical sciences.

Coordinates, locus problems, the straight line and circle, graphs, transformation of coordinates, conic sections, parametric equations, transcendental equations, solid analytic geometry.

Math. 20, 21. Calculus (4, 4)—Three lectures and two one-hour laboratory periods a week, first and second semesters, second and first semesters. Prerequisite, **Math. 17**, or equivalent. Open to students in engineering, education and the physical sciences.

Limits, derivatives, differentials, maxima and minima, curve sketching, rates, curvature, kinematics, integration with geometric and physical applications, partial derivatives, space geometry, multiple integrals, infinite series.

Math. 64. Differential Equations for Engineers (3)—First and second semesters. Prerequisite, **Math. 21** or equivalent. Required of students in mechanical and electrical engineering.

Ordinary and partial differential equations of the first and second order with emphasis on their engineering applications.

A. Algebra

For Graduates and Advanced Undergraduates

Math. 100, 101. Higher Algebra (3, 3)—(Not offered 1949-50). Prerequisite, **Math. 20, 21** or equivalent.

Selected topics in algebra will be taken up from a point of view designed to strengthen and deepen the grasp of the subject. (Good.)

Math. 102. Theory of Equations (3)—First semester. Prerequisite, **Math. 20, 21** or equivalent.

Solution of algebraic equations, symmetric functions. (Good.)

Math. 103. Introduction to Modern Algebra (3)—Second semester. Prerequisite, **Math. 20, 21** or equivalent

Linear dependence, matrices, groups, vector spaces. (Good.)

Math. 106. Introduction to the Theory of Numbers (3). Prerequisite, Math. 20, 21 or equivalent.

Integers, divisibility, Euclid's algorithm, Diophantine equations. prime numbers, Moebius function, congruences, residues. (Brigham.)

For Graduates

Math. 200, 201. Modern Algebra (3, 3)—(Not offered 1949-50). Prerequisite, Math. 103 or consent of instructor.

Matrices, groups, rings, fields, algebraic numbers, Galois theory. (Good.)

Math. 202. Matrix Theory (3)—Second semester. Prerequisite, Math. 103 or consent of instructor.

The theory of vectors and matrices with applications. (Good.)

Math. 204, 205. Topological Groups (3, 3). Prerequisite, consent of instructor.

An introductory course in abstract groups, topological spaces, and the study of collections of elements enjoying both these properties. The concept of a uniform space will be introduced and studied. The representation problem will be considered together with the subject of Lie groups.

(Good, Hall.)

Math. 271. Selected Topics in Algebra (3)—(Arranged).

B. Analysis

For Graduates and Advanced Undergraduates

Math. 110, 111. Advanced Calculus (3, 3)—First and second semesters. Prerequisite, Math. 20, 21, or equivalent.

Limits, continuous functions, differentiation and integration with application to mechanics, infinite series, Fourier series, functions of several variables, differential equations with applications to mechanics and physics, multiple integrals, the theorems of Gauss and Stokes, the calculus of variations.

Math. 114, 115. Differential Equations (3, 3). Prerequisite, Math, 20, 21 or equivalent.

Ordinary differential equations, symbolic methods, successive approximations, solutions in series, orthogonal functions, Bessel functions, Sturmian theory. Partial differential equations of first and second order, characteristics, boundary value problems, Pfaffians, systems of equations, applications. (Leutert.)

Math. 116. Introduction to Complex Variable Theory (3)—(Not offered 1949-50). Prerequisite, Math. 20, 21, or equivalent. Open to students of engineering and the physical sciences. Graduate students of mathematics should enroll in Math. 210, 211.

Fundamental operations in complex numbers, differentiation and integration, analytic functions, conformal mapping, residue theory, power series.

Math. 117. Fourier Series (3)—(Not offered 1949-50). Prerequisite, Math. 114 or equivalent.

Representation of functions by series of orthogonal functions. Applications to the solution of boundary value problems of some partial differential equations of physics and engineering.

For Graduates

Math. 210, 211. Functions of a Complex Variable (3, 3). Prerequisite, advanced calculus.

Complex numbers, infinite series, Cauchy-Riemann equations, conformal mapping, complex integral, the Cauchy theory, the Weierstrass theory, Riemann surfaces, algebraic functions, periodic and elliptic functions, the theorems of Weierstrass and Mittag-Leffler.

Math. 213, 214. Functions of a Real Variable (3, 3)—(Not offered 1949-50). Prerequisite, advanced calculus.

The real number system, point sets, the Heine-Borel theorem, continuous functions, derivatives, infinite series, uniform convergence, the Riemann integral, Jordan content, the Lebesgue integral, Fourier series.

Math. 215, 216. Analysis (3, 3). Prerequisite, advanced calculus and a course in complex variable theory.

Theory of residues, infinite series, asymptotic expansions, trigonometrical series, differential and integral equations, transcendental functions.

Math. 272. Selected Topics in Analysis (3)—(Arranged).

C. Geometry and Topology

For Graduates and Advanced Undergraduates

Math. 122, 123. Elementary Topology (3, 3). Prerequisite, Math. 20 and 21 or equivalent.

Open and closed sets. Elementary topology of the straight line and the Euclidean plane. The Jordan Curve Theorem and its applications. Simple connectivity. (Hall.)

Math. 124, 125. Introduction to Projective Geometry (3, 3). Prerequisite, Math. 20, 21, or equivalent.

Elementary projective geometry largely from the analytic approach, projective transformations, cross ratio, harmonic division, projective coordinates, projective theory of conics, Laguerre's definition of angle. (Jackson.)

Math. 126. Introduction to Differential Geometry (3)—First semester. Prerequisite, Math. 20, 21, or equivalent.

The differential geometry of curves and surfaces with the use of vector and tensor methods, curvature and torsion, moving frames, curvilinear coordinates, the fundamental differential forms, covariant derivatives, intrinsic geometry, curves on a surface, dynamical applications. (Vanderslice.)

Math. 128, 129. Higher Geometry (3, 3)—First and second semesters. Prerequisite, two years of college mathematics. Open to students in the College of Education.

This course is designed for students preparing to teach geometry in high school. The first semester is devoted to the modern geometry of the triangle, circle and sphere. In the second semester emphasis is placed on the axiomatic development of Euclidean and Non-Euclidean geometry. (Jackson.)

For Graduates

Math. 220, 221. Differential Geometry (3, 3)—(Not offered 1949-50). Prerequisite, Math. 126 or equivalent.

Curves and surfaces, geometry in the large, the Gauss-Bonnet formula, ovaloids, surfaces of constant curvature, projective differential geometry. (Jackson.)

Math. 222. Foundations of Geometry (3)—Second semester. Prerequisite, Math. 124 or consent of instructor.

The course will develop the elements of projective geometry from the postulational point of view, laying emphasis on the logical basis of the results obtained. Desargues configuration, and Pappus configuration, perspectivities, conics, and construction of coordinate systems will be among the topics studied. (Jackson.)

Math. 223, 224. Combinatorial Topology (3, 3)—(Not offered 1949-50). Prerequisites, Advanced Calculus and Math. 103 or equivalent.

Homology and Homotopy theory of complexes developed from a group theoretic basis. (Hall.)

Math. 225, 226. Set-theoretic Topology (3, 3). Prerequisite, Advanced Calculus.

Foundations of mathematics based on a set of axioms, metric spaces, convergence and connectivity properties of point sets, continua and continuous curves, the topology of the plane. (Hall.)

Math. 227. Tensor Analysis (3)—Second semester. Prerequisites, Advanced Calculus and differential equations.

Algebra and calculus of tensors, Riemannian geometry and its extensions, differential invariants, applications to physics and engineering, the theory of relativity. (Vanderslice.)

Math. 273. Selected Topics in Geometry and Topology (3)—(Arranged).

D. Applied Mathematics**For Graduates and Advanced Undergraduates**

Math. 130, 131. Analytic Mechanics (3, 3). Prerequisite, Math. 20, 21, or equivalent.

Statics, kinematics, dynamics of a particle, elementary celestial mechanics, Lagrangian equations for dynamical systems of one, two, and three degrees of freedom, Hamilton's principle, the Hamilton-Jacobi partial differential equation.

Math. 132, 133. Advanced Mathematics for Engineers and Physicists (3, 3). Prerequisite, Math. 64, or equivalent.

Designed to introduce the student to advanced mathematical methods and their applications to problems arising in the fields of aeronautical, electrical and mechanical engineering, and in the physical sciences.

Math. 134. Vector Analysis (3)—(Not offered 1949-50). Prerequisite, Math. 20, 21, or equivalent.

Vector algebra with applications to geometry and mechanics.

(Vanderslice.)

Math. 135. Numerical Analysis. (3)—First semester. Prerequisites, Math. 114 or equivalent.

Survey of high-speed calculators; applicability of numerical techniques. Evaluation of errors in extended calculations; round-off and truncation errors. Finite differences; smoothing; divided differences; central differences; uniform intervals. Newton's interpolation formula; inverse interpolation. Numerical differentiation and integration. Systems of simultaneous equations. Solution of typical problems.

(Polachek.)

Math. 139. Operational Calculus (3)—(Not offered 1949-50). Prerequisite, Math. 64, or equivalent. Intended for students of engineering and physics.

Operational solutions of ordinary and partial differential equations. Fourier and Laplace transforms.

For Graduates

Math. 230, 231. Applied Mathematics (3, 3). Prerequisite, advanced calculus and differential equations.

The subject material for this course will be chosen from the fields of dynamics, elasticity, hydro-dynamics.

Math. 232, 233. Partial Differential Equations of Mathematical Physics (3, 3). Prerequisites, Advanced Calculus and Differential Equations.

The characteristic properties of elliptic, parabolic, and hyperbolic partial differential equations with special reference to problems in potential theory, the flow of heat, hydrodynamics and elasticity.

(Martin.)

Math. 234. Potential Theory (3)—(Not offered 1949-50). Prerequisites, Math. 110, 111, or equivalent.

The equations of Laplace and Poisson, flux, the theorems of Gauss and Green, potential of volume and surface distributions, harmonic functions, Green's function, the problems of Dirichlet and Neumann, introduction to the linear integral equations of potential theory.

Math. 235. Advanced Numerical Analysis (3)—Second semester. Prerequisites, Math. 115, and Math. 135, or equivalent.

Review of numerical differentiation and integration, solution of ordinary differential equations. Construction of multivariate tables. Properties of elliptic, hyperbolic and parabolic partial differential equations. Conversion of partial differential equations to system of difference equations; determination of mesh sizes and convergence. The relaxation method of R. V. Southwell. Integral equations. Solution of typical problems. (Polachek.)

Math. 236. Mathematical Theory of Hydrodynamics (3)—(Not offered 1949-50). Prerequisite, a course in complex variable theory.

Equation of continuity, rotational and irrotational flows, Bernoulli's theorem, Helmholtz's theory of vorticity, flux of momentum; the plane motion of an incompressible perfect fluid, including stream function, complex potential, Joukowski's theory, the formula of Blasius, Kármán's vortex street. Prandtl's theory of a finite wing, and an introduction to the theory of viscous fluids.

Math. 237. Mathematical Theory of Elasticity (3)—(Not offered 1949-50). Prerequisites, Math. 110, 111, or equivalent.

Stress and strain, deformation of columns, bending torsion, and flexure of beams, Euler-Bernoulli formulas, Saint-Venant's Principle, Airy's function, strain and potential energy, buckling problems, minimum principles, Betti's reciprocity law. (Weinstein.)

Math. 238. Mathematical Theory of Continuous Media (3)—Second semester. Prerequisites, vector or tensor analysis and consent of instructor.

Kinematics of continuous media, conservation of mass, momentum and energy, thermodynamics, heat conduction, elastic bodies, plates and shells, fluid mechanics (non-linear theory), rarefied gases, viscous fluids, plasticity. (Truesdell.)

Math. 239. Mathematical Theory of Electricity and Magnetism (3)—First semester. Prerequisites, vector analysis and consent of instructor.

Maxwell's equations electrostatics, condensers, dielectrics, conductors and potential distributions, electric current, linear conductors, flow in two and three dimensions, magnetostatics, electromagnetic inductance, transients, alternating currents, stress and energy, electromagnetic forces and energy; plane, cylindrical and spherical electromagnetic waves, radiation. (Truesdell.)

Math. 274. Selected Topics in Applied Mathematics (3)—(Arranged).

E. Statistics**For Graduates and Advanced Undergraduates**

Math. 150, 151. Probability (3, 3)—(Not offered 1949-50). Prerequisites, differential and integral calculus.

Combinatory analysis, total, compound and inverse probability, continuous distributions, theorems of Bernoulli and Laplace, applications to statistics and the theory of errors.

Math. 152, 153. Mathematical Statistics (2, 2). Prerequisites, differential and integral calculus.

Frequency distributions and their parameters, multivariate analysis and correlation, theory of sampling, analysis of variance, statistical inference.

Math. 154, 155. Applications of Statistics (3, 3). Two lectures and one two-hour laboratory period per week. Prerequisites, Math. 20, 21, or equivalent.

This course is intended for those who desire a working knowledge of statistical methods without going into the finer points of the mathematical theory. Tools of probability theory, testing hypotheses, power of tests, tests of goodness of fit, estimation, design of experiments, moments, curve fitting, regression, and correlation.

Math. 156. Biological Statistics (2)—Second semester. Prerequisite, consent of instructor.

This course is intended for students of agriculture and the biological sciences. Topics will be selected from the following: Multiple correlation, multiple regression, analysis of variance and covariance, statistical design, in accordance with the needs and interests of the class. Illustrations will be drawn mainly from agriculture and the biological sciences.

F. Colloquium and Research**For Graduates**

Math. 290. Colloquium—First and second semesters.

The colloquium meets weekly for reports on the research of the faculty and graduate students, and for expository lectures on papers published in current mathematical journals.

Math. 300. Research—(Arranged).

MUSIC

Professor Randall; Assistant Professor Sykora; Instructors Burton, French, Haslup, and Power

Music 1. Music Appreciation (3)—First semester.

A study of all types of classical music (not including opera) from the time of Haydn, with a view to developing the ability to listen and enjoy.

Music 2, 3. History of Music (1, 1)—First and second semesters.

A course in the history of music covering the development of all forms of music (not including opera) from the Greeks to the present.

Music 4. Men's Glee Club (1)—First and second semester.

A total of six credits may be earned.

Music 5. Women's Chorus (1)—First and second semesters.

A total of six credits may be earned.

Music 6. Orchestra (1)—First and second semesters.

Music 7. Fundamentals of Music (2)—First and second semesters.

This course is a prerequisite to Harmony and includes a study of major and minor scales, intervals, basic piano techniques, sight singing, simple musical forms and theory. A student must achieve a grade of B in order to continue with the study of Harmony.

Music 8. Solfeggio and Ear Training, I (2)—First and second semesters. Three times a week.

This course aims to develop facility in singing at sight and the ability to sing with good intonation. The aural study of the melodic and rhythmic patterns in Solfeggio is also included.

Music 10. Band (1)—First and second semesters.

For discussion of Student and R. O. T. C. Bands, see page 42. A total of six credits may be earned.

Music 11. Solfeggio and Ear Training, II (2)—First and second semesters. Three times a week.

This course is a continuation of the study of Solfeggio and Ear Training, I. More difficult music is used and special emphasis is placed on part singing.

Music 50. Elementary Conducting (2)—First and second semesters.

The student develops a technique of the baton based on the fundamental meter designs. Choral and simple orchestra numbers are conducted. Eurythmics are applied to develop a sense of rhythm through muscular coordination and accompanying is also a feature of the course.

Music 66. Survey of the Opera (3)—Second semester.

The object of this course is to acquaint the student with the librettos, music and the composers of the standard operas.

Music 70. Harmony, I (3)—First and second semesters. Prerequisite, Fundamentals of Music.

Music theory is reviewed and a study is made of harmonic progressions, triads, dominant seventh and ninth chords in root position and inversions. The course continues through altered and mixed chords to modulation.

Music 71. Harmony, II (3)—Second semester.

This course is a continuation of Harmony, I. It includes the study of modulation and the inharmonic intervals. Analysis, simple harmonizations, and original compositions are a part of the course.

Music 80. Instruments of the Orchestra (Strings) (2)—First and second semesters.

A study is made of the techniques of the string instruments through practical experience.

Music 81. Instruments of the Band (2)—First and second semesters.

A study is made of the techniques of the wind and percussion instruments through practical experience.

Music 90. History of American Music (2)—Second semester.

This course, designed to be an integral part of the American Civilization program, reviews the development of music in the United States from Colonial days to 1800, 1800 to the Civil War, and 1865 to the present. Phases of our musical history which are studied include: Early Hymn Writers, Stephen Foster, the Negro Spiritual, and Twentieth Century Music.

Music 120. Advanced History and Appreciation of Music (3)—First semester. Prerequisites, History of Music 2 and 3.

The aim of this course is an extensive study of the evolution of forms and styles of musical composition as illustrated in the music of various periods.

Music 150. Harmony, III (3)—First semester.

The practical application to the piano keyboard of the harmonic principles acquired in Harmony I and II are applied in this course. Its procedures include harmonization of melodies, improvisations and accompaniments, playing at dictation and transposition.

Music 151. Harmony, IV (3)—Second semester.

This course aims to develop a feeling for musical form and a technique for writing and arranging music for voices, piano, and groups of instruments.

Music 160. Advanced Choral Conducting, Materials and Methods (2)—First semester.

Prerequisite, Elementary Conducting. It aims to improve conducting technique through practical chorus experience, learn methods of vocal procedures, and make a survey of choral literature.

Music 161. Advanced Orchestral Conducting, Materials and Methods (2)—Second semester. Prerequisite, Elementary Conducting.

Conducting and arranging for the orchestra, band, and instrumental ensembles are developed through practical experience. Methods of instruction and a survey of instrumental literature are made.

****Music 12, 112. Applied Music (1)**—One private lesson per week.

Private lessons in piano, voice, string and wind instruments will be offered. There will be a laboratory fee for all private lessons.

**Applied Music, Course Numbers:	Piano	Voice	Instrument
First Year	12	13	14
Second Year	52	53	54
Third Year	112	113	114
Fourth Year	152	153	154

PHILOSOPHY

Professor Baylis; Assistant Professor Dewey; Instructor Robinson.

Phil. 1. Philosophical Perspectives (3)—Each semester.

Systematic and critical examination and evaluation of representative hypotheses as to the nature of man and his place in the universe, the nature and function of religion and of science in the life of man. (The Staff.)

Phil. 2. Philosophical Perspectives (3)—Each semester.

Systematic and critical examination and evaluation of representative hypotheses as to the nature and function of morality, government, education, and art. (The Staff.)

Relational Courses

Elective without prerequisite for sophomores, juniors, or seniors

Phil. 51. Philosophy of Art (3)—First semester.

The nature of art and beauty; their relations and their function in society. The nature of esthetic contemplation, esthetic feelings, and esthetic objects. Standards of criticism. (Dewey.)

Phil. 52. Philosophy of Literature (3)—Second semester.

Reading and philosophical criticism of essays, novels, dramas, poems, or other works of current or classical literature containing ideas significant for ethics, social policy, religion, art, science, education, or other major human interests. (Dewey.)

Phil. 53. Philosophy of Religion (3)—First semester.

A critical and constructive study of the nature of religion, of its various forms and manifestations, and of its functions in human life. (Baylis.)

Phil. 54. Political and Social Philosophy (3)—Second semester.

Classical and contemporary theories of the nature and functions of the state. The bearings of ethical principles on problems of government, international relations, economics, the family, and other social institutions. Human rights, social control and individual freedom. (Dewey.)

Phil. 55. Logic (3)—Second semester.

Conditions of clear statement and valid reasoning. Language and meaning. Immediate inference and the syllogism. Modern developments in deductive logic. The nature and function of deductive systems. (Baylis.)

Phil. 56. Philosophy of Science (3)—First semester.

The nature of science and its function in human life. Critical examination of the nature of scientific method, of probability and of confirmation. Implications of scientific knowledge for human values. (Robinson.)

For Advanced Undergraduates and Graduates**Phil. 101. Ancient Philosophy (3)—First semester.**

A survey of the development of occidental philosophy from its beginnings through the Classical Period. Special attention to the Pre-Socratics, Socrates, Plato, and Aristotle. (Robinson.)

Phil. 102. Modern Philosophy (3)—Second semester. Prerequisite, Phil. 101.

A survey of occidental philosophy from the Renaissance to the time of Kant. Special attention to Bacon, Hobbes, Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, and Kant. (Robinson.)

Phil. 111. Medieval Philosophy (3)—First semester. (Not offered in 1949-50; to be offered in 1950-51.) Prerequisite, Phil. 101.

A survey of the development of occidental philosophy from the Classical Period to the Renaissance, with special attention to Plotinus, Augustine, Thomas Aquinas and other Scholastics. (Robinson.)

Phil. 112. Recent and Contemporary Philosophy (3)—Second semester. Prerequisite, Phil. 101.

A survey of the development of occidental philosophy from the time of Hegel to the present. Special attention to Hegel, Schopenhauer, Nietzsche, Mill, Comte, Bergson, Bradley, Dewey, Whitehead, and Russell. (Robinson.)

Phil. 121. American Philosophy (3)—First semester.

The main tendencies in American philosophy including Puritanism, The Enlightenment, Transcendentalism, Idealism, Pragmatism, Positivism, and Realism. Special attention to Edwards, Johnson, Franklin, Paine, Channing, Emerson, Thoreau, Royce, Peirce, James, and outstanding contemporaries. (Dewey.)

Phil. 151. Ethics (3)—First semester. Prerequisite (after June, 1950), Phil. 2 or one year of philosophy.

Good and bad; right and wrong; moral and immoral. Free will, determinism and moral responsibility. The nature and ground of moral obligation. Critical evaluation of the chief rival theories as to the correct principles of wise choice. (Baylis.)

Phil. 191. Topical Investigations (3)—Each semester..

Tutorial course. Independent study under individual guidance. Topics selected by students in conference with the department chairman. Restricted to advanced students with credit for at least 12 units of philosophy. (The Staff.)

For Graduates

Phil. 201. Research in Philosophy (3)—Each semester.

Selected projects in historical research under individual guidance.

(The Staff.)

Phil. 203. Selected Problems in Philosophy (3)—Each semester.

Intensive study of selected topics in systematic philosophy under individual supervision.

(The Staff.)

Phil. 205. Seminar in the History of Philosophy (3)—First semester.

A special topic will be selected for each year, e. g., Plato, Aristotle, Kant, British Empiricists, Russell.

(The Staff.)

Phil. 206. Seminar in the Problems of Philosophy (3)—Second semester.

A special topic will be selected each year, e. g., Symbolic Logic, Philosophical Analysis, Perceptual Knowledge.

(The Staff.)

PHYSICS

Professors Morgan, Myers; Part-time Professors Brickwedde, Johnson, Kennard, McMillen; Visiting Professor Durkee; Associate Professors Cooper, Iskraut; Assistant Professors Andrews, Swartz.

Phys. 1. Elements of Physics: Mechanics, Heat, and Sound (3)—First semester. Two lectures, and one recitation a week. The first half of a survey course in general physics. *This course is for the general student and does not satisfy the requirements of the professional schools.* Prerequisite, successful passing of the qualifying examination in elementary mathematics. Lecture demonstration fee \$3.00.

Phys. 2. Elements of Physics: Magnetism, Electricity, and Optics (3)—Second semester. Two lectures and one recitation a week. The second half of a survey course in general physics. *This course is for the general student and does not satisfy the requirements of the professional schools.* Prerequisite, Phys. 1. Lecture demonstration fee \$3.00.

Phys. 10. Fundamentals of Physics: Mechanics and Heat (4)—First semester. Two lectures, one recitation, and one three hour laboratory period a week. The first half of a course in general physics. *This course together with Phys. 11, satisfies the minimum requirements of medical and dental schools.* Prerequisite, entrance credit in trigonometry or Math. 11 or concurrent enrollment in Math. 14 and 15. Lecture demonstration and laboratory fee, \$6.00.

Phys. 11. Fundamentals of Physics: Sound, Optics, Magnetism, and Electricity (4)—Second semester. Two lectures, one recitation, and one three hour laboratory period a week. The second half of a course in general physics. Prerequisites, Phys. 10, or 20. Lecture demonstration and laboratory fee, \$6.00.

Phys. 20. General Physics: Mechanics and Heat (5)—First semester. Two lectures, two recitations and one three hour laboratory period a week. The first half of a course in general physics. *Required of all students in the engineering curricula.* Math. 20 is to be taken concurrently. Lecture demonstration and laboratory fee, \$6.00.

Phys. 21. General Physics: Sound, Optics, Magnetism, and Electricity (5)—Second semester. Two lectures, two recitations, and one three hour laboratory period a week. The second half of a course in general physics. *Required of all students in the engineering curricula.* Prerequisite, Phys. 20. Math. 21 is to be taken concurrently. Lecture demonstration and laboratory fee, \$6.00.

Phys. 50, 51. Applied Mechanics (3, 3)—First and second semesters. Three lectures a week. Prerequisite, Phys. 11, or Phys. 21.

Phys. 52. Heat (3)—First semester. Three lectures a week. Prerequisite, Phys. 11 or 21. Math. 20 is to be taken concurrently. (Iskraut.)

Phys. 54. Sound (3)—Second semester. Three lectures a week. Prerequisite, Phys. 11 or 21. Math. 21 is to be taken concurrently. (Myers.)

Phys. 60. Intermediate Physics Experiments. 3 hours laboratory work for each credit hour. One or more credits may be taken concurrently. Prerequisites, Phys. 11 or 21. Laboratory fee, \$6.00 per credit hour. (Cooper.)

For Advanced Undergraduates and Graduates

Phys. 100. Advanced Experiments. 3 hours laboratory work for each credit hour. One or more credits may be taken concurrently. Prerequisites, Phys. 52 or 54 and four credits in Phys. 60. Laboratory fee, \$6.00 per credit hour. (Cooper.)

Phys. 101. Laboratory Arts (1)—Second semester. Four hours laboratory a week. Prerequisite, 2 credit hours, Phys. 100. Laboratory fee \$6.00. (Morgan.)

Phys. 102. Optics (3)—First semester. Three lectures a week. Prerequisites, Phys. 11 or 21 and Math 21. (Myers.)

Phys. 104, 105. Electricity and Magnetism (3, 3)—Second and first semesters. Three lectures a week. Prerequisites, Phys. 11 or 21 and Math. 21. (Iskraut.)

Phys. 106, 107. Theoretical Mechanics (3, 3)—First and second semesters. Three lectures a week. Prerequisites, Phys. 11 or 21 and Math. 21. (Morgan.)

Phys. 112, 113. Modern Physics (2, 2)—First and second semester. Two lectures a week. Prerequisites, Phys. 102 or 104. (Cooper.)

Phys. 116, 117. Fundamental Hydrodynamics (3, 3)—Three lectures a week. Prerequisite, Physics 107 and Math. 21.

Phys. 120, 121. Experimental Nuclear Physics (3, 3)—Off-campus. Two lectures and one laboratory a week. Prerequisite, Phys. 113 and two credits of Phys. 100. (Johnson.)

Phys. 126. Kinetic Theory of Gases (3)—Off-campus. Prerequisites, Phys. 107 and Math. 21, or equivalent. (Kennard.)

For Graduates

Of the courses which follow, 200, 201, 212, and 213 are given every year; all others will be given according to the demand.

Phys. 200, 201. Introduction to Theoretical Physics primarily for students planning to do graduate work (5, 5)—Five lectures a week, first and second semesters. Prerequisite, advanced standing in physics and mathematics. (Myers.)

Phys. 202, 203. Advanced Dynamics (2, 2)—Two lectures a week. Prerequisite, Phys. 200.

Phys. 204. Electrodynamics (4)—Four lectures a week, second semester. Prerequisite, Phys. 201. (Iskraut.)

Phys. 206. Physical Optics (3)—Prerequisite, Phys. 201. (Myers.)

Phys. 208, 209. Thermodynamics (2, 2)—Prerequisite, Phys. 201 or equivalent. (Cooper.)

Phys. 210, 211. Statistical Mechanics and the Kinetic Theory of Gases (2, 2)—Two lectures a week. Prerequisite, Phys. 112 and 201.

Phys. 212, 213. Introduction to Quantum Mechanics (2, 2)—Two lectures a week, first and second semesters. Prerequisite, Phys. 201. (Brickwedde.)

Phys. 214, 215. Theory of Atomic Structure and Spectral Lines (2, 2)—Two lectures a week. Prerequisite, Phys. 213. (McMillen.)

Phys. 216, 217. Molecular Structure (2, 2)—Two lectures a week. Prerequisite, Phys. 213. (Brickwedde.)

Phys. 218, 219. X-rays and Crystal Structure (3, 3)—Three lectures a week. (Morgan.)

Phys. 220. Application of X-ray and Electron Diffraction Methods (2)—Two laboratory periods a week. (Morgan.)

Phys. 222, 223. Boundary-Value Problems of Theoretical Physics (2, 2)—Prerequisite, Phys. 201.

Phys. 224, 225. Supersonic Aerodynamics and Compressible Flow (2, 2)—Prerequisite, Phys. 201.

Phys. 226, 227. Theoretical Hydrodynamics (3, 3)—Prerequisite, elementary hydrodynamics. (Kennard.)

Phys. 230. Seminar (1)—First and second semesters.

- Phys. 232, 233. Hydromechanics Seminar (1, 1). (Kennard.)
- Phys. 250. Research—Credit according to work done.
- Phys. 228, 229. The Electron (2, 2)—Prerequisites, Phys. 204 and Phys. 213. (Johnson.)
- Phys. 234, 235. Nuclear Physics (2, 2)—Prerequisite, Phys. 213. (Johnson.)
- Phys. 236. Theory of Relativity (3)—Prerequisite, Phys. 200. (Iskraut.)
- Phys. 238. Quantum Theory—selected topics (3)—Prerequisite, Phys. 236. (Iskraut.)
- Phys. 240, 241. Theory of Sound and Vibrations (2, 2)—Prerequisite, Phys. 201. (McMillen.)
- Phys. 242, 243. Theory of Solids (2, 2)—Two lectures a week. Prerequisite, Phys. 213. (Myers.)

PSYCHOLOGY

Professors Smith, Sprowls; Associate Professors Cofer, Hackman, Walker, Schaefer; Instructor Grzeda.

University Counseling Bureau. The Department of Psychology maintains a Counseling Bureau, provided with a well-trained technical staff and equipped with an excellent stock of standardized tests of aptitude, ability, and interest. By virtue of payment of the annual "Advisory and Testing Fee," students are entitled to the services of the Counseling Bureau without further charge.

Psych. 1 Introduction to Psychology (3)—First and second semesters.

Not open to Freshmen.

A basic introductory course, intended to bring the student into contact with the major problems confronting psychology and the more important attempts at their solution.

Psych. 2. Applied Psychology (3)—First and second semesters. Prerequisite, Psych. 1 or 3.

Application of research methods to basic human problems in business and industry, in the professions, and in other practical concerns of everyday life.

Psych. 3, 4. General Psychology (3, 3). Prerequisite, sophomore standing.

Primarily for students in the College of Arts and Sciences who major or minor in psychology. A systematic survey of the field of psychology with particular emphasis on research methodology. Consideration of individual differences, motivation, sensory and motor processes, learning, emotional behavior and personality. Psych. 3 is prerequisite for Psych. 4.

Psych. 5. Mental Hygiene (3)—First and second semesters. Prerequisite. Psych. 1 or 3.

The more common deviations of personality; typical methods of adjustment.

For Advanced Undergraduates and Graduates

Graduate credit will be assigned only for students certified by the Department of Psychology as qualified for graduate standing.

Psych. 106. Statistical Methods in Psychology (3)—First and second semesters. Prerequisite, Psych. 1 or 3. (Schaefer.)

A basic introduction to quantitative methods used in psychological research; measures of central tendency, of spread, and of correlation. Majors in Psychology must take this course in the junior year.

Psych. 110. Educational Psychology (3)—First and second semesters. Prerequisite, Psych. 1 or 3. (Grzeda.)

Researches on fundamental psychological problems encountered in education; measurement and significance of individual differences, learning, motivation, transfer of training.

Psych. 121. Social Psychology (3)—First and second semesters. Prerequisite, Psych. 1 or 3. (Grzeda.)

Psychological study of human behavior in social situations; influence of others on individual behavior, social conflict and individual adjustment, communication and its influences on normal social activity.

Psych. 122. Advanced Social Psychology (3)—Second semester. Prerequisite, Psych. 121 and consent of instructor.

A systematic review of researches and points of view in regard to major problems in the field of social psychology.

Psych. 125. Child Psychology (3)—First semester. Prerequisite, Psych. 1 or 3. (Schaefer.)

Behavioral analysis of normal development and normal socialization of the growing child.

Psych. 126. Developmental Psychology (3)—Second semester. Prerequisite, Psych. 1 or 3. (Schaefer.)

Genetic approach to human motivation and accomplishment. Research on simpler animal forms, the child, the adolescent and the adult in terms of the development of normal adult behavior.

Psych. 127. Psychology of Early Man (3)—Second semester. Prerequisite, Psych. 121. (Sprowls.)

A study of cultural and anthropological origins and continuities in man from Pithecanthropus to the historical period; interpretations of the artifacts and customs in the light of the mental processes involved in their evolution. Periodic observation trips to the Museum of Natural History in Washington.

Psych. 128. Human Motivation (3)—First semester. Prerequisite, Psych. 121. (Cofer.)

Review of research literature dealing with determinants of human performance, together with consideration of the major theoretical contributions in this area.

Psych. 131. Abnormal Psychology (3)—Second semester. Prerequisite, Psych. 5. Two lectures, one clinic. (Sprowls.)

The nature, occurrence, and causes of marked psychological abnormalities, with emphasis on clinical rather than theoretical aspects.

Psych. 136. Applied Experimental Psychology (3)—Second semester. Prerequisite, Psych. 1 or 3 or consent of instructor.

A study of basic human factors involved in the design and operation of machinery and equipment. Of special interest to students in industrial psychology. (Walker.)

Psych. 140. Psychological Problems in Advertising (3)—First semester. Prerequisite, 1 or 3. (Hackman.)

Psychological problems that arise in connection with the production and field-testing of advertising; techniques employed in attacking these problems through research.

Psych. 142. Techniques of Interrogation (3)—Second semester. Prerequisite, Psych. 121. (Hackman.)

The interview, the questionnaire, and other methods of obtaining evidence on human attitudes and reactions, as viewed in the light of modern research evidence.

Psych. 145. Introduction to Experimental Psychology (3)—First and second semesters. One lecture and two two-hour laboratory periods per week. Prerequisite, Psych. 4.

Primarily for students who major or minor in psychology. A systematic survey of the laboratory methods and techniques as applied to human behavior and their application in field work. Emphasis is placed on individual and group participation in experiments, use of data and preparation of reports. Laboratory fee per semester, \$4.00. (Walker.)

Psych. 150. Tests and Measurements (3)—First semester. Prerequisite, Psych. 106. Laboratory fee, \$4.00. (Smith.)

Critical survey of predictors used in vocational and educational orientation and in industrial practice, with emphasis on development and standardization. Laboratory practice in the use and interpretation of test and non-test predictors.

Psych. 155. Psychological Techniques in Vocational Counseling (3)—Second semester. Prerequisite, Psych. 150. (Smith.)

A survey course, intended for those who wish to qualify for junior positions involving a knowledge of counseling, but who are unable to undertake graduate study.

Psych. 161. Psychological Techniques in Personnel Administration (3)—Second semester. Prerequisite, Psych. 128. (Schaefer.)

A survey course, intended for those who plan to enter some phase of personnel work, but who do not plan to undertake graduate study.

Psych. 167. Psychological Problems in Aviation (3)—First semester. Prerequisite, Psych. 1. (Walker.)

Techniques in selection and training of aircraft pilots; researches on special conditions encountered in flight.

Psych. 191, 192. Advanced General Psychology (3, 3)—First and second semesters. Prerequisite, 15 hours of Psychology and consent of instructor. (Hackman.)

A systematic review of the more fundamental investigations upon which modern psychology is based. Intended primarily for exceptional senior majors and for graduate students.

Psych. 194. Independent Study in Psychology (3)—First and second semesters. Prerequisites, senior standing and consent of instructor. (Staff.)

Integrated reading under direction, leading to the preparation of an adequately documented report on a special topic.

Psych. 195. Minor Problems in Psychotechnology (3)—First and second semesters. Prerequisites, senior standing and consent of instructor. (Staff.)

Prosecution of original research project under direction of staff. Intended primarily for exceptional senior majors.

Psych. 198. Proseminar: Current Research in Psychotechnology (3)—First semester. Prerequisites, senior standing and consent of instructor.

A survey of recent and current researches of systematic importance. Intended primarily for exceptional senior majors and new graduate students.

For Graduate Students

Psych, 203, 204. Seminar: Review of Current Technological Researches (3, 3)—First and second semesters. Prerequisite, consent of instructor. (Staff.)

Psych. 205, 206. Historical Viewpoints and Current Theories in Psychology (3, 3)—First and second semesters. (Cofer.)

Psych. 210. Occupational Information (3)—Second semester. Prerequisite, Psych. 150.

Psych. 211. Job Analysis and Description (3)—First semester. Prerequisite, Psych. 210.

Psych. 220, 221. **Counseling Techniques (3, 3)**—First and second semesters. Prerequisite, Psych. 210. (Smith.)

Psych. 222. **Rehabilitation Techniques (3)**—Second semester. Prerequisite, Psych. 220.

Psych. 223. **Diagnosis and Correction of Reading Difficulties (3)**—First semester. Prerequisite, Psych. 221. (———.)

Psych. 224. **Counseling for Marital Problems (3)**—Second semester. Prerequisite, Psych. 221.

Psych. 225. **Participation in Counseling Clinic (3)**—First semester. Prerequisite, Psych. 221. (Smith.)

Psych. 230. **Determinants of Human Efficiency (3)**—Second semester.

Psych. 231. **Training Procedures in Industry (3)**—First semester. Prerequisite, Psych. 230.

Psych. 233. **Social Organization in Industry (3)**—First semester. Prerequisite, Psych. 230.

Psych. 240. **Interview and Questionnaire Techniques (3)**—Second semester. Prerequisite, Psych. 150. (Hackman.)

Psych. 241. **Controlled Publicity (3)**—First semester. Prerequisite, consent of instructor. (Hackman.)

Psych. 242. **Measurement of Group Reaction (3)**—Second semester. Prerequisite, consent of instructor. (Hackman.)

Psych. 250, 251. **Development and Validation of Predictors (3, 3)**—First and second semesters. Prerequisites, Psych. 150. (Schaefer.)

Psych. 252, 253. **Advanced Statistics (3, 3)**—First and second semesters. Prerequisite, Psych. 106. (Hackman.)

Psych. 260, 261. **Individual Tests (3, 3)**—First and second semesters. Laboratory fee, \$4.00. Prerequisite, Psych. 150. (Cofer.)

Psych. 262. **Appraisal of Personality (3)**—First semester. Prerequisite, Psych. 150.

Psych. 264, 265. **Projective Tests (3, 3)**—First and second semesters. Laboratory fee, \$4.00. Prerequisite, Psych. 261. (Cofer.)

Psych. 266, 267. **Theories of Personality and Motivation (3, 3)**—First and second semesters. (Cofer.)

Psych. 270. **Advanced Abnormal Psychology (3)**—First semester. Prerequisite, Psych. 131. (Sprowls.)

Psych. 271. **Special Testing of Disabilities (3)**—Second semester. Prerequisite, Psych. 270. (———.)

Psych. 272, 273. Individual Clinical Diagnosis (3, 3)—First and second semesters. Prerequisite, Psych. 261. (Cofer.)

Psych. 274. Individual Therapy (3)—First semester. Prerequisite, Psych. 261.

Psych. 275. Group Therapy (3)—Second semester. Prerequisite, Psych. 274.

Psych. 278. Seminar in Clinical Psychology for Teachers (3)—First semester. (Sprowls.)

Psych. 280. Physiological Psychology (3)—Second semester. Prerequisite, Psych. 192. (————.)

Psych. 290, 291 Research for Thesis (3, 3)—First and second semesters. (Staff.)

SOCIOLOGY

Professors Hoffsommer, Lejins; Visiting Professor Bailey; Associate Professor Shankweiler; Assistant Professors Cussler, Houser, Hutchinson; Instructors De Give, Ebersole, Imse, Lucas, Willner.

Sociology 1 or its equivalent is prerequisite to all other courses in sociology.

Sociology 1, 2, 183, 186 and 196 or their equivalents are required for an undergraduate major in sociology.

Soc. 1. Sociology of American Life (3)—First and second semesters.

Sociological analysis of the American social structure; metropolitan, small town, and rural communities; population distribution, composition and change; social organization. (Staff.)

Soc. 2. Principles of Sociology (3)—First and second semesters. Prerequisite, Soc. 1 or sophomore standing.

The basic forms of human association and interaction; social processes; institutions; culture; human nature and personality. (Staff.)

Soc. 5. Anthropology (3)—First semester. Prerequisite, Soc. 1.

Introduction to anthropology; origins of man; development and transmission of culture; backgrounds of human institutions. (Hutchinson.)

Soc. 13. Rural Sociology (3)—First semester. Prerequisite, Soc. 1.

Rural life in America; its people, social organization, culture patterns, and problems. (Hoffsommer.)

Soc. 14. Urban Sociology (3)—Second semester. Prerequisite, Soc. 1.

Urban growth and expansion; characteristics of city populations; urban institutional and personality patterns; relations of city and country. (Bailey.)

Soc. 51. Social Pathology (3)—First semester. Prerequisite, Soc. 1 and sophomore standing.

Personal-social disorganization and maladjustment; physical and mental handicaps; economic inadequacies; programs of treatment and control.

(Shankweiler.)

Soc. 52. Criminology (3)—Second semester. Prerequisite, Soc. 1 and sophomore standing.

Criminal behavior and the methods of its study; causation; typologies of criminal acts and offenders; punishment, correction, and incapacitation; prevention of crime.

(Lejins.)

Soc. 62. Social Institutions (3)—Second semester. Prerequisite, Soc. 1 and sophomore standing.

Nature and function of social institutions; the perpetuation of behavior through customs and societal norms; typical contemporary American institutions.

(Hutchinson.)

Soc. 64. Marriage and the Family (3)—First and second semesters. Prerequisite, Soc. 1 and sophomore standing.

Functions of the family; marriage and family adjustments; factors affecting mate selection, marital relations, and family stability in contemporary social life.

(Shankweiler.)

For Advanced Undergraduates and Graduates

Sociology 1 or its equivalent and junior standing are prerequisite to courses numbered 100 to 199.

Soc. 113. The Rural Community (3)—Second semester.

A detailed study of rural life with emphasis on levels of living, the family, school and church and organizational activities in the fields of health, recreation, welfare and planning.

(Hoffsommer.)

Soc. 114. The City (3)—First semester.

The rise of urban civilization and metropolitan regions; ecological process and structure; the city as a center of dominance; social problems, control, and planning.

(Bailey.)

Soc. 115. Industrial Sociology (3)—Second semester. Social organization of American industry; functions of members of industrial organization, status, social structure, patterns of interaction and relations of industry and society.

(Imse.)

Soc. 118. Community Organization (3)—Second semester.

Community organization and its relation to social welfare; analysis of community needs and resources; health, housing, recreation; community centers; neighborhood projects.

(Shankweiler.)

Soc. 121, 122. Population (3, 3)—First and second semesters.

Population distribution, composition and growth in North America and Eurasia; trends in fertility and mortality; migrations; population prospects and policies. (Baker.)

Soc. 123. Ethnic Minorities (3)—First semester.

Basic social processes in the relations of ethnic groups within the state; immigration groups and the Negro in the United States; ethnic minorities in Europe. (Ebersole.)

Soc. 124. The Culture of the American Indian (3)—Second semester.

A study of type cultures; cultural processes; and the effects of acculturation on selected tribes of Indians in the Americas. (Hutchinson.)

Soc. 131. Introduction to Social Service (3)—First semester.

General survey of the field of social-welfare activities; historical developments; growth, functions, and specialization of agencies and services, private and public. (L. Houser.)

Soc. 141. Sociology of Personality (3)—First semester.

Development of human nature and personality in contemporary social life; processes of socialization; attitudes, individual differences, and social behavior. (Ebersole.)

Soc. 144. Collective Behavior (3)—Second semester.

Social interaction in mass behavior; communication processes; structure and functioning of crowds, strikes, audiences, mass movements, and the public. (Ebersole.)

Soc. 145. Social Control (3)—First semester.

Forms, mechanisms, and techniques of group influence on human behavior; problems of social control in contemporary society. (Ebersole.)

Soc. 147. Sociology of Law (3)—First semester.

Law as a form of social control; interrelation between legal and other conduct norms as to their content, sanctions and methods of securing conformity; law as an integral part of the culture of the group; factors and processes operative in the formation of legal norms; legal norms as determinants of human behavior. (Lejins.)

Soc. 153. Juvenile Delinquency (3)—First semester.

Juvenile delinquency in relation to the general problem of crime; analysis of factors underlying juvenile delinquency; treatment and prevention. (Lejins.)

Soc. 154. Crime and Delinquency Prevention (3)—Second semester. Prerequisite, Soc. 52 or Soc. 153 or consent of instructor. (Offered in alternate years with Soc. 156.) (Lejins.)

Mobilization of community resources for the prevention of crime and delinquency; area programs and projects.

Soc. 156. Institutional Treatment of Criminals and Delinquents (3)—Second semester. Prerequisite, Soc. 52 or Soc. 153 or consent of instructor. (Offered in alternate years with Soc. 154.)

Organization and functions of penal and correctional institutions for adults and juveniles. (Lejins.)

Soc. 171. Family and Child Welfare (3)—First semester.

Programs of family and child welfare agencies; social services to families and children; child placement; foster families. (Shankweiler.)

Soc. 173. Social Security (3)—First semester.

The social security program in the United States; public assistance; social insurance. (Hutchinson.)

Soc. 174. Public Welfare (3)—Second semester.

Development and organization of the public welfare movement in the United States; social legislation; interrelations of federal, state, and local agencies and institutions. (L. Houser.)

Soc. 183. Social Statistics (3)—First and second semesters.

Collection, statistical analysis, and interpretation of social data; problems of quantitative measurement of social phenomena. (Imse.)

Soc. 186. Sociological Theory (3)—First and second semesters.

Development of the science of sociology; historical backgrounds; recent theories of society. (Bailey.)

Soc. 196. Senior Seminar (3)—Second semester. Required of and open only to senior majors in sociology.

Scope, fields and methods of sociology; practical applications of sociological knowledge. Individual study and reports. (Hoffsommer.)

For Graduates

Prerequisites for entrance upon graduate study leading to an advanced degree with a major in sociology: either (1) an undergraduate major (totalling at least 24 semester hours) in sociology or (2) 12 semester hours of sociology (including 6 semester hours of advanced courses) and 12 additional hours of comparable work in economics, political science, or psychology. Reasonable substitutes for these prerequisites may be accepted in the case of students majoring in other departments who desire a graduate minor or several courses in sociology.

With the exception of Soc. 201, 291-292, individual courses numbered 200 to 299 will ordinarily be offered in alternate years.

Soc. 201. Methods of Social Research (3)—First semester.

Selection and formulation of research projects; methods and techniques of sociological investigation and analysis. Required of graduate majors in sociology. (Hoffsommer.)

Soc. 215. Community Studies (3)—First semester.

Intensive study of the factors affecting community development and growth, social structure, social stratification, and social institutions; analysis of particular communities. (Hoffsommer.)

Soc. 221. Population and Society (3)—Second semester.

Selected problems in the field of population; quantitative and qualitative aspects; American and world problems. (Staff.)

Soc. 224. Race and Culture (3)—Second semester.

Race and culture in contemporary society; mobility and the social effects of race and culture contacts and intermixture. (Staff.)

Soc. 241. Personality and Social Structure (3)—Second semester.

Comparative analysis of the development of human nature, personality, and social traits in select social structures. (Staff.)

Soc. 246. Public Opinion and Propaganda (3)—Second semester.

Processes involved in the formation of mass attitudes; agencies and techniques of communication; quantitative measurement of public opinion. (Staff.)

Soc. 253. Advanced Criminology (3)—First semester.

Critical survey of the principal issues in contemporary criminological theory and research. (Lejins.)

Soc. 255. Seminar: Juvenile Delinquency (3)—First semester.

Selected research problems in the field of juvenile delinquency. (Lejins.)

Soc. 257. Social Change and Social Policy (3)—First semester.

Emergence and development of social policy as related to social change; policy-making factors in social welfare and social legislation. (Staff.)

Soc. 262. Family Studies (3)—Second semester.

Case studies of family situations; statistical studies of family trends; methods of investigation and analysis. (Shankweiler.)

Soc. 282. Sociological Methodology (3)—Second semester.

Logic and method of sociology in relation to the general theory of scientific method; principal issues and points of view. (Staff.)

Soc. 285. Seminar: Sociological Theory (3)—First semester.

Critical and comparative study of contemporary European and American theories of society. (Bailey.)

Soc. 290. Research in Sociology (Credit to be determined)—First and second semesters. (Staff.)

Soc. 291. Special Social Problems (Credit to be determined)—First and second semesters.

Individual research on selected problems. (Staff.)

SPEECH AND DRAMATIC ART

Professor Ehrensberger; Associate Professor Ansberry; Assistant Professors Provenson, Strausbaugh, Niemeyer, Batka; Instructors Mayer, Hendricks, Smith, Pugliese, Golden, Coppinger, Harris, Palmer, Rogers, Mason, Bolger, Benjamin; Assistants Barraclough, McDonald, Bierce.

Speech 1, 2. Public Speaking (2, 2)—First and second semesters. Prerequisite for advanced speech courses. Speech I prerequisite for Speech II.

The preparation and delivery of short original speeches; outside readings; reports; etc. It is recommended that this course be taken during the freshman year. Laboratory fee \$1.00 each semester. (Staff.)

Speech Clinic—No credit.

Remedial work in minor speech defects. The work of the clinic is conducted in individual conferences and in small group meetings. Hours arranged by consultation with the respective speech instructor.

Speech 3. Fundamentals of Speech (3)—First semester.

Study in the bases and mechanics of speech. This course is designed for students who expect to do extensive work in speech. May be taken concurrently with Speech 1, 2. (Hendricks.)

Speech 4. Voice and Diction (3)—Second semester.

Emphasis upon the improvement of voice, articulation, and phonation. May be taken concurrently with Speech 1, 2. (Mayer and Staff.)

Speech 5, 6. Advanced Public Speaking (2, 2)—First and second semesters. Prerequisite, Speech 1, 2, or consent of the instructor.

Advanced work on basis of Speech 1, 2. Special emphasis is placed upon speaking situations the students will face in their respective vocations. (Strausbaugh and Staff.)

Speech 7. Public Speaking (2)—Second semester. Limited to freshman engineering students. The preparation and delivery of speeches, reports, etc., on technical and general subjects. Laboratory fee \$1.00. (Staff.)

Speech 8, 9. Acting (3, 3)—First and second semesters. Admission by consent of instructor.

Basic principles of histrionic practice. (Niemeyer.)

Speech 10. Group Discussion (2)—First and second semesters.

A study of the principles, methods, and types of discussion, and their application in the discussion of contemporary problems.

(Hendricks and Staff.)

Speech 11, 12. Debate (2, 2)—First and second semesters.

A study of the principles of argument, analysis, evidence, reasoning, fallacies, briefing, and delivery, together with their application in public speaking. (Golden.)

Speech 13. Oral Interpretation (3)—First semester.

The oral interpretation of literature and the practical training of students in the art of reading. (Provensen.)

Speech 14. Stagecraft (3)—First semester.

Fundamentals of technical production. Emphasis on construction of scenery. Laboratory fee, \$2.00. (Harris.)

Speech 15. Stagecraft (3)—Second semester.

Technical production. Emphasis on stage lighting. Prerequisite, Speech 14. Laboratory fee, \$2.00. (Harris.)

Speech 16. Introduction to the Theatre (3)—First semester.

A general survey of the fields of the theatre. (Mayer.)

Speech 17. Make-up (2)—Second semester. One lecture and one laboratory a week. (Mayer.)

A lecture-laboratory course in the theory and practice of stage make-up, covering basic requirements as to age, type, character, race, and period. Laboratory fee \$2.00.

Speech 18, 19. Introductory Speech (1, 1)—First and second semesters.

This course is designed to give those students practice in public speaking who cannot schedule Speech 1, 2. Speech 18 prerequisite for Speech 19. Laboratory fee \$1.00 each semester. (Staff.)

Speech 20. History of the Theatre (3)—First semester.

A survey of dramatic production from early origins to 1800. (Niemeyer.)

Speech 21. History of the Theatre (3)—Second semester.

A survey of dramatic production from 1800 to the present. (Niemeyer.)

Speech 22. Introduction to Radio (3)—First and second semesters. Prerequisite for all courses in Radio.

The development, scope, and influence of American broadcasting. (Coppinger and Staff.)

Speech 23. Parliamentary Law (1)—First and second semesters.

A study of the principles and application of parliamentary law as applied to all types of meetings. Thorough training in the use of Robert's Rules of Order. (Strausbaugh.)

For Advanced Undergraduates and Graduates**Speech 101. Radio Speech (3)—First semester.** Prerequisite, Speech 4.

The theory and application of microphone techniques. Practice in all types of radio speaking. Laboratory fee \$2.00. (Batka.)

Speech 102. Radio Production (3)—Second semester.

A study of the multiple problems facing the producer. Special emphasis is given to acoustic setup, casting, "miking", timing, cutting, and the co-

ordination of personnel factors involved in the production of radio programs. Admission by consent of instructor. Laboratory fee \$2.00.

(Batka.)

Speech 103, 104. Speech Composition and Rhetoric (3, 3)—First and second semesters.

A study of rhetorical principles and models of speech composition in conjunction with the preparation and presentation of specific forms of public address. (Golden.)

Speech 105. Pathology (3)—First semester.

The causes, nature, symptoms, and treatment of common speech disorders.

(Ansberry.)

Speech 106. Clinic (3)—Second semester. Prerequisite, Speech 105.

A laboratory course dealing with the various methods of correction plus actual work in the clinic both on and off the campus. (Ansberry.)

Speech 107. Advanced Oral Interpretation (3)—Second semester. Prerequisite, Speech 13.

Emphasis upon the longer reading. Program planning. (Provensen.)

Speech 108. Public Speaking (2)—Second semester. Limited to Junior Engineers. Prerequisite, Speech 7.

Continuation of Speech 7 with emphasis upon engineering projects that fall within student's own experience. (Strausbaugh and Staff.)

Speech 109. Speech Seminar for Senior Engineers (2)—Prerequisite, Speech 7, 108.

(Strausbaugh.)

Speech 110. Teacher Problems in Speech (3)—Second semester. For students who intend to teach.

Everyday speech problems that confront the teacher. (Hendricks.)

Speech 111. Seminar (3)—Second semester. Required of speech majors.

Present-day speech research.

(Ehrensberger.)

Speech 112. Phonetics (3)—Second semester.

Training in the recognition and production of the sounds of spoken English, with an analysis of their formation. Practice in transcription. Mastery of the international phonetic alphabet. (Ansberry.)

Speech 113. Play Production (3)—Second semester.

Development of procedure followed by the director in preparing plays for public performance. (Harris and Staff.)

Speech 114. Costuming (3)—First semester. One lecture and two laboratories a week.

Consideration of the use of color, line, and texture in designing, constructing, and adapting costumes for the stage.

Speech 115. Radio in Retailing (3)—First semester. Limited to students in the College of Home Economics. Prerequisites, Speech 1, 2. English 1, 2. Junior standing. Laboratory fee \$2.00.

Writing and production of promotional programs for the merchandising of wearing apparel and housefurnishings. Collaboration with Washington and Baltimore radio stations and retail stores. (Batka.)

Speech 116. Radio Announcing (3)—Second semester. Prerequisite, Speech 101.

The theory and application of all types of announcing. Laboratory fee \$2.00. (Batka.)

Speech 117. Radio Continuity Writing (3)—First semester.

A study of the principles and methods of writing for broadcasting. Application will be made in the writing of the general types of continuity. Admission by consent of instructor. (Coppinger.)

Speech 118. Advanced Radio Writing (3)—Second semester. Prerequisite, Speech 117.

Advanced work with emphasis upon the dramatic form. Admission by consent of instructor. (Coppinger.)

Speech 119. Radio Acting (3)—Second semester.

A workshop course designed to give the student practice in radio acting. Admission by consent of instructor. (Batka.)

Speech 120. Advanced Speech Pathology (3)—Second semester. Prerequisite, Speech 105.

A continuation of Speech 105, with emphasis on the causes and treatment of organic speech disorders. (Ansberry.)

Speech 121. Stage Design (3)—Second semester. Prerequisite, Speech 14, 15.

The planning of stage settings and the application of the principles of design to the dramatic production. Admission by consent of the instructor. (Harris.)

Speech 122, 123. Radio Workshop (3, 3)—First and second semesters.

A laboratory course dealing with all phases of producing a radio program. Admission by consent of instructor. Laboratory fee \$2.00 each semester. (Batka.)

Speech 124, 125. American Public Address (3, 3)—First and second semesters.

The first semester covers the period from Colonial times to the Civil War period. The second semester covers from the Civil War period through the contemporary period. (Golden.)

Speech 126. Semantic Aspects of Speech Behavior (3)—First semester.

An analysis of speech and language habits from the standpoint of General Semantics. (Hendricks.)

Speech 127, 128. Military Speech and Commands (4)—First and second semesters. Limited to students in the College of Military Science and Tactics.

The preparation and delivery of lectures dealing with military subjects. Effective execution of field orders, commands, etc. Extensive use of voice recordings. (Hendricks.)

Speech 129, 130. Play Directing (2, 2)—Admission by consent of instructor.

A lecture-laboratory course dealing with the fundamentals of script cutting, pacing, movement, blocking and rehearsal routine as applied to the directing of plays. (Mayer, Niemeyer.)

For Graduates

Speech 200. Thesis (3-6)—Off-campus. Credit in proportion to work done and results accomplished. (Staff.)

Speech 201. Special Problems (2-4)—Off-campus. Arranged. (Staff.)

Speech 210. Anatomy and Physiology of Speech and Hearing (3)—Off-campus.

A study of the anatomy and physiology of the auditory and speech mechanisms. (Glorig.)

Speech 211. Advanced Clinical Practice (3)—Off-campus.

A comprehensive survey of the entire field of present-day clinical practice. (Glorig.)

Speech 212. Advanced Speech Pathology (3)—Off-campus.

Etiology and therapy for organic and functional speech disorders. (Ainsberry.)

Speech 213. Speech Problems of the Hard of Hearing (3)—Off-campus.

Correction of abnormal speech habits and instruction in speech conservation. (Baltzer.)

Speech 214. Clinical Audiometry (3)—Off-campus.

Testing of auditory acuity with pure tones and speech. (Sunday)

Speech 215. Auditory Training (3)—Off-campus.

Orientation and adjustment of patients in the use of hearing aids. (Staff.)

Speech 216. Speech Reading (3)—Off-campus.

A course of training designed to present the fundamentals of speech reading. (Baughman.)

Speech 217. Clinical Practice in the Selection of Prosthetic Appliances (3)—Off-campus.

A laboratory course in modern methods of utilizing electronic hearing aids. (Staff.)

Speech 218. Problems of Hearing and Deafness (3)—Off-campus.

The adjustment of the individual with a hearing impairment socially, emotionally and vocationally. (Staff.)

ZOOLOGY

Professors Phillips and Burhoe; Assistant Professors Littleford and Negherbon; Instructors Allen, Bartlett, and Stringer; Lecturer Reynolds.

Zool. 1. General Zoology (4)—First and second semesters. Two lectures and two laboratory periods a week.

This course, which is cultural and practical in its aim, deals with the basic principles of animal life. Typical invertebrates and a mammalian form are studied. Laboratory fee \$6.00.

Zool. 2, 3. Fundamentals of Zoology (4, 4)—First and second semesters. Two lectures and two laboratory periods a week. This course satisfies the freshman premedical requirements in general biology. Freshmen who intend to choose zoology as a major should register for this course. Zoology 1 or 2 is a prerequisite for Zoology 3. Students who have completed Zoology 1 may register for Zoology 3 but not for Zoology 2.

A thorough study of the anatomy, classifications, and life histories of representative animals. During the first semester emphasis is placed on invertebrate forms and during the second semester upon vertebrate forms including the frog. Laboratory fee \$6.00 each semester.

Zool. 5. Comparative Vertebrate Morphology (4)—First semester. Two lectures and two laboratory periods a week. Prerequisite, one year of Zoology.

A comparative study of selected organ systems in certain vertebrate groups. Laboratory fee \$6.00.

Zool. 14, 15. Human Anatomy and Physiology (4, 4)—First and second semesters. Two lectures and two laboratory periods a week. Prerequisite, one course in zoology. Zoology 14 is a prerequisite for Zoology 15.

For students who desire a general knowledge of human anatomy and physiology. Laboratory fee \$6.00 each semester.

Zool. 16. Human Physiology (4)—First semester. Two lectures and two laboratory periods a week. Not open to freshmen.

An elementary course in physiology. Laboratory fee \$6.00.

Zool. 20. Vertebrate Embryology (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisites, one year of Zoology.

The development of the chick to the end of the fourth day and early mammalian embryology. Laboratory fee \$6.00.

Zool. 53. Physiology of Exercise (2)—Second semester. Two lectures a week. Prerequisite, Zoology 15.

A detailed consideration of the mechanism of muscular contraction; the metabolic, circulatory, and the respiratory responses in exercise; and the integration by means of the nervous system. Open only to students for whom this is a required course.

Zool. 55. Development of the Human Body (2)—First semester. Two lecture periods a week.

A study of the main factors affecting the growth and development of the child with especial emphasis on normal development. Open only to students for whom this is a required course.

Zool. 75, 76. Journal Club (1, 1)—First and second semesters. One lecture period a week. Prerequisite, a major in Zoology.

Reviews, reports, and discussions of current literature.

For Graduates and Advanced Undergraduates

Zool. 101. Mammalian Anatomy (3)—Second semester. Three laboratory periods a week. Registration limited. Permission of the instructor must be obtained before registration. Recommended for premedical students, and those whose major is zoology.

A course in the dissection of the cat or other mammal. By special permission of the instructor a vertebrate other than the cat may be used for study. Laboratory fee \$6.00. (Stringer.)

Zool. 102. General Animal Physiology (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisites, one year of Zoology and one year of chemistry.

The general principles of physiological functions as shown in mammals and lower animals. Laboratory fee \$6.00. (Phillips.)

Zool. 104. Genetics (3)—First semester. Three lecture periods a week. Prerequisite, one course in zoology or botany. Recommended for premedical students.

A consideration of the basic principles of heredity. (Burhoe.)

Zool. 106. Histological Technique (3)—Second semester. One lecture and two laboratory periods a week. Prerequisite, one semester of Zoology. Permission of the instructor must be obtained before registration.

The preparation of animal tissues for microscopical examination. Laboratory fee, \$6.00. (Stringer.)

Zool. 108. Animal Histology (4)—First semester. Two lectures and two laboratory periods a week. Prerequisite, one year of Zoology.

A microscopic study of tissues and organs selected from representative vertebrates, but with particular reference to the mammal. Laboratory fee \$6.00. (Stringer.)

Zool. 110. Parasitology (4)—First semester. Two lectures and two laboratory periods a week. Prerequisite, one year of Zoology.

A study of the morphology, physiology and life cycles of animal parasites with special emphasis on practical problems in parasite control and disease prevention. Laboratory fee, \$6.00. (Negherbon.)

Zool. 114. Field Zoology (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisite, one year of Zoology.

This course consists in collecting and studying both land and aquatic forms of nearby woods, fields, and streams, with emphasis on the higher invertebrates and certain vertebrates, their breeding habits, environment, and modes of living. Laboratory fee \$6.00. (Littleford.)

Zool. 116. Protozoology (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisites, Histology; Bacteriology desirable.

The taxonomy, morphology, cytology, physiology, and distribution of the unicellular animal organisms. Emphasis will be on the importance of the protozoa in present-day biological research. Therefore, considerable reading of current and recent literature will be expected. The course will endeavor to teach the student the techniques required to prepare protozoa for permanent study and their cultivation. Stress will be given to the forms responsible for human and animal disease. Laboratory fee, \$6.00.

(Negherbon.)

Zool. 118. Invertebrate Zoology (4)—First semester. Two lectures and two laboratory periods a week. Prerequisite, General Zoology and Vertebrate Embryology.

An advanced course dealing with the taxonomy, morphology, and embryology of the invertebrates, exclusive of insects. Laboratory fee \$6.00.

(Allen.)

Zool. 121. Principles of Animal Ecology (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, one course in Zoology and one course in Chemistry.

Animals are studied in relation to their natural surroundings. Biological, physical and chemical factors of the environment which affect the growth, behavior, habits and distribution of animals are stressed. Laboratory fee \$6.00.

(Allen.)

Zool. 125. Fisheries Biology (3)—First semester. Two lectures and one laboratory period a week. Prerequisites, Comparative Vertebrate Morphology and Physiology.

A study of the biology and economic development of fresh and salt water forms. Particular attention is given to practical applications in fisheries work. Laboratory fee, \$6.00.

(Littleford.)

Zool. 130. Aviation Physiology (3)—Second Semester. Two lectures and one demonstration a week. Prerequisite, one course in Physiology and permission of the instructor.

A general course in applied physiology with special reference to physiological problems arising in aviation, including consideration of: respiration at high altitude, the design and use of O₂ equipment, the effects of mechanical forces such as radial and linear acceleration, protective devices, and various influences of pressure change on mammalian organisms.

(Reynolds.)

For Graduates

Zool. 200. Ichthyology and Marine Zoology (4)—First semester. Two lectures and two laboratory periods per week. Prerequisite, Zoology 121.

A study of the anatomy, physiology, and habits of fishes and other marine animals of commercial importance. Laboratory fee \$6.00.

(Littleford.)

Zool. 201. Microscopical Anatomy (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisite, Zoology 108.

A detailed study of the morphology and activity of cells composing animal tissues with specific reference to the vertebrates. Laboratory work includes the preparation of tissues for microscopic examination. Laboratory fee \$6.00.

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Zool. 202. Animal Cytology (4)—First semester. Two lectures and two laboratory periods a week. Prerequisite, Zoology 108.

A study of cellular structure with particular reference to the morphology and physiology of cell organoids and inclusions. Laboratory is concerned with methods of studying and demonstrating the above materials. Laboratory fee \$6.00.

(Negherbon.)

Zool. 203. Advanced Embryology (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisite, Zoology 20.

Mechanics of fertilization and growth. A review of the important contributions in the field of experimental embryology. Laboratory fee \$6.00.

(Burhoe.)

Zool. 204. Advanced Animal Physiology (4)—First semester. Two lectures and two laboratory periods a week. Prerequisite, Zoology 102.

The principles of general and cellular physiology as found in animal life. Laboratory fee \$6.00.

(Phillips.)

Zool. 205. Hydrobiology (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisites, Zoology 121, Chem. 3, Physics 11.

A study of the biological, chemical, and physical factors which determine the growth, distribution, and productivity of microscopic and near microscopic organisms in marine and freshwater environments with special reference to the Chesapeake Bay region. Laboratory fee \$6.00.

(Littleford.)

Zool. 206. Research (credit to be arranged)—First and second semesters. Laboratory fee \$6.00 each semester

(Staff.)

Zool. 207. Zoology Seminar (1)—First and second semesters. One lecture a week.

(Staff.)

Zool. 208. Special Problems in General Physiology (3)—First or second semester. Hours and credits arranged. Prerequisite, Zool. 102. Laboratory fee \$6.00. (Phillips.)

Zool. 220. Advanced Genetics (3)—First semester. Two lectures and one laboratory period a week. Prerequisite, Zool. 104.

A consideration of salivary chromosomes, the nature of the gene, chromosome irregularities, polyploidy, and mutations. Breeding experiments with *Drosophila* and small mammals will be conducted. Laboratory fee \$6.00. (Burhoe.)

Students in Bacteriology



Reading the results of bacteriological analyses of water



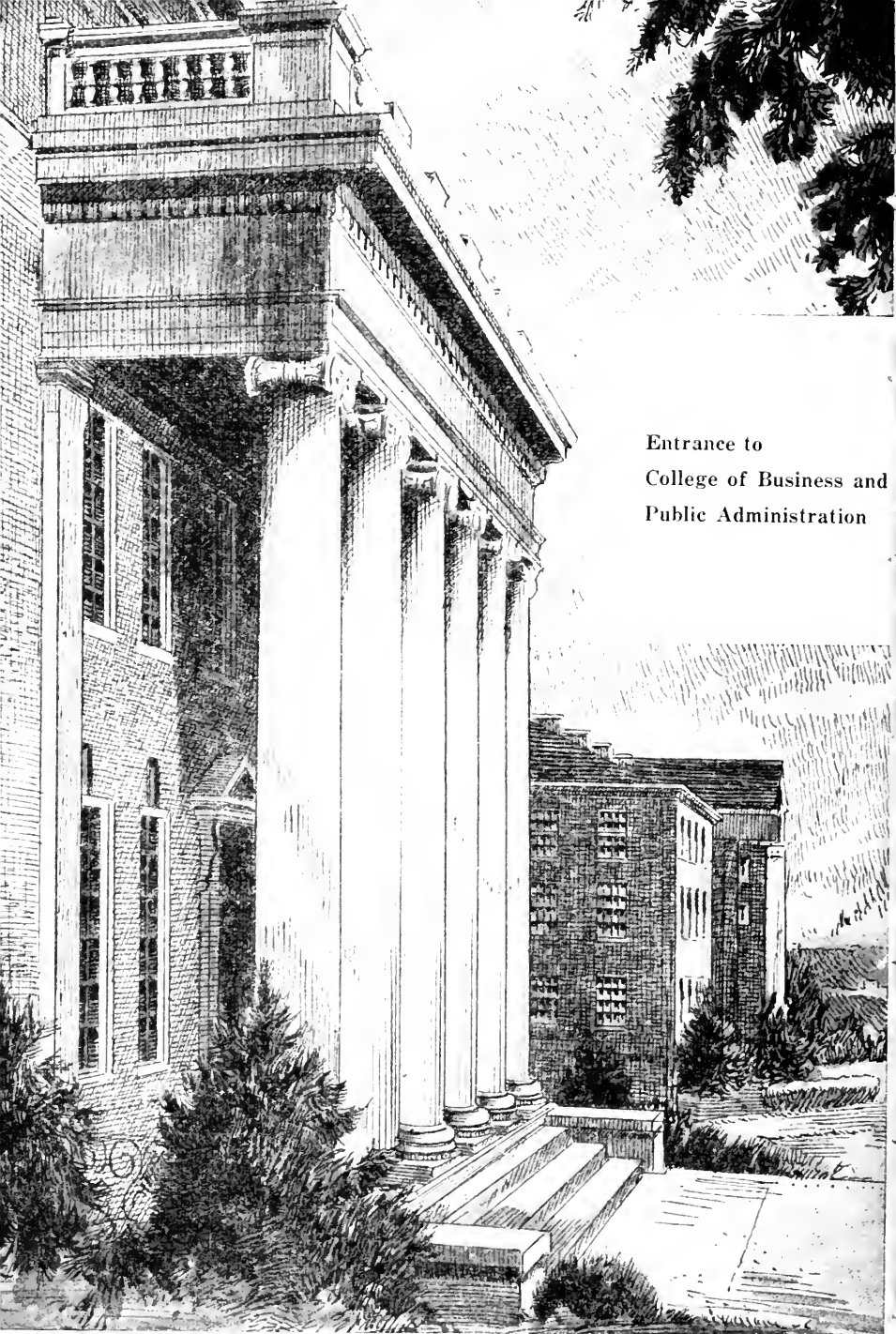
Evaluating the bacteriological potency of disinfectants

Inoculating a rabbit with bacterial antigen



Recording results on the comparison of new media for enumerating bacteria in milk





Entrance to
College of Business and
Public Administration

College of
BUSINESS and PUBLIC ADMINISTRATION

STAFF

J. Freeman Pyle, Ph.D., Dean

- ANDERSON, JAMES R., M.A., Instructor of Geography.
ASH, WILLARD O., M.A., Instructor of Statistics.
BAKER, OLIVER E., Ph.D., Professor of Geography.
BAUM, WERNER A., Ph.D., Professor of Geography.
BROOKS, VERNA I., M.Ed., Instructor in Office Techniques.
BURDETTE, FRANKLIN L., Ph.D., Professor of Government and Politics.
CALHOUN, CHARLES E., M.B.A., Professor of Finance.
CLEMENS, ELI W., Ph.D., Professor of Business Administration.
COHEN, RALPH L., C.P.A., Assistant Instructor in Accounting.
COLE, DAVID M., M.B.A., Instructor in Economics.
COOK, J. ALLAN, Ph.D., Associate Professor of Marketing.
COVER, JOHN H., Ph.D., Professor and Director of Bureau of Business and Economic Research.
CRIST, RAYMOND E., Litt.D., Professor of Geography.
CRONIN, CHARLES F., B.S., Assistant Professor in Accounting.
DAIKER, JOHN A., B.S., Instructor in Accounting.
NORTON, HUGH S., Instructor in Economics.
DIXON, ROBERT G., Ph.D., Assistant Professor of Government and Politics.
FREDERICK, JOHN H., Ph.D., Professor of Transportation and Foreign Trade.
GASS, EDMUND C., M.A., Instructor of Government and Politics.
GRUBB, KENNETH A., M.B.A., Professor of Marketing and Advertising.
GRUBER, DAVID M., B.S., C.P.A., Instructor in Accounting.
GRUCHY, ALLAN G., Ph.D., Professor of Economics.
HALE, JOHN I., LL.B., M.S. (Retired, Capt. USN), Associate Professor in Business Administration.
HESTER, DONALD C., M.A., Instructor in Government and Politics.
HICKMAN, ROY T., M.A., Instructor in Geography.
HU, CHARLES Y., Ph.D., Professor of Geography.
LONG, WILLIAM F., M.A., Instructor of Economics.
LONGANECKER, WALTER R.
MAGNER, JERRY, M.A., Instructor in Government and Politics.
MAHNER, JERRY, M.A., Instructor in Government and Politics.
MAUCK, ELWYN A., Ph.D., Professor of Government and Politics.
MCCALMONT, DAVID B., B.A., LL.B., Instructor of Economics.
MCHUGH, THOMAS F., B.S., Assistant Professor of Business Administration.
MCKIEVER, JOHN W., M.C.S., C.P.A., Instructor in Accounting.
MCLARNEY, WILLIAM J., M.A., Associate Professor in Industrial Management.

- MESSER, JEAN F., M.A., Instructor in Accounting.
- MOELLER, RONALD I., M.B.A., Instructor in Business Administration.
- MOSER, MARTIN W., M.A., Instructor in Government and Politics.
- MOUNCE, EARL W., M.A., LL.M., Associate Professor of Law and Labor.
- O'NEILL, JANE H., B.A., Instructor in Office Techniques.
- PATRICK, ARTHUR S., M.A., Associate Professor of Office Management and Business Education.
- PLISCHKE, ELMER, Ph.D., Assistant Professor of Government and Politics.
- PYLE, J. FREEMAN, Ph.D., Professor and Dean of College of Business and Public Administration.
- RATZLAFF, CARL J., Ph.D., Professor and Head of Economics Department.
- RAY, JOSEPH M., Ph.D., Professor and Head of Department of Government and Politics and Director of Bureau of Public Administration.
- REID, JAMES H., M.A., Professor of Marketing.
- ROBINSON, EDWARD A., M.A., Instructor in Economics.
- SMITH, BENJAMIN L., B.S., Instructor in Accounting.
- SPURGEON, CHARLES E., M.A., Instructor in Government and Politics.
- STAPLETON, MICHAEL A., M.A., Instructor in Economics.
- STEINMEYER, REUBEN G., Ph.D., Professor of Government and Politics.
- SWEENEY, CHARLES T., M.B.A., C.P.A., Associate Professor of Accounting.
- SYLVESTER, HAROLD F., Ph.D., Associate Professor in Business Administration.
- SYLVESTER, JOHN K., Ph.D., Assistant Professor of Economics.
- THATCHER, LIONEL W., Ph.D., Professor and Head of Department of Business Organization and Administration.
- TITUS, CHARLES, M.A., Instructor in Economics.
- VAN ROYEN, WILLIAM, Ph.D., Professor of Geography.
- WAGNER, RUBY C., B.S., Instructor in Office Techniques.
- WATSON, DOROTHY M., M.S., Instructor of Geography.
- WATSON, J. DONALD, Ph.D., Professor of Finance.
- WEDEBERG, SIVERT M., M.A., C.P.A., Professor of Accounting.
- WOODBURY, MAYNARD B., M.A., Instructor of Accounting.
- WRIGHT, HOWARD W., Ph.D., C.P.A., Associate Professor of Accounting.

COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION

JOHN FREEMAN PYLE, Ph.D., *Dean*

The University of Maryland is in an unusually favorable location for students of Business, Government and Politics, Economics, Public Administration, Geography, Foreign Service and International Relations. Downtown Washington is only twenty-five minutes away in one direction, while the Baltimore business district is less than an hour in the other. There is frequent transportation service from the University gates to each city. Special arrangements are made to study commercial, manufacturing, exporting, and importing agencies and methods in Baltimore, assistance is given qualified students who wish to obtain a first hand glimpse of the

far-flung economic activities of the national government or to utilize the libraries, government departments, and other facilities available in Washington.

ORGANIZATION OF THE COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION

The College comprises two major sections, viz. Business Administration and World Economics and Public Affairs. Each section has departments as indicated below.

A. Business Administration

I. Department of Business Organization and Administration

1. Accounting and Statistics
2. Financial Administration
3. Industrial Administration
4. Marketing Administration
 - (a) Advertising
 - (b) Foreign Trade and International Finance
 - (c) Retail Store Management
 - (d) Sales Management
5. Personnel Administration
6. Transportation Administration
 - (a) Airport Management
 - (b) Traffic Management
7. Public Administration

II. Bureau of Business and Economic Research

III. Department of Economics

IV. Department of Office Techniques and Management

1. Office Management
2. Office Techniques

B. World Economics and Public Affairs

I. Department of Government and Politics

II. Bureau of Public Administration.

III. Department of Foreign Service and International Relations.

IV. Department of Geography.

Aims

The College of Business and Public Administration offers training designed to prepare young men and women for service in business firms, governmental agencies, cooperative enterprises, labor unions, small business units, and other organizations requiring effective training in administrative skills and techniques, and for the teaching of business subjects, economics, geography, and government and politics in high schools and colleges. It sup-

plies scientific administrative training to students and prospective executives on a professional basis comparable to university training in the other professional fields. Administration is regarded as a profession, and the College of Business and Public Administration prepares its students for this profession by offering courses of instruction which present general principles and techniques of management and administration and brings together in systematic form the experiences and practices of business firms and governmental units. This plan of education does not displace practical experience, but supplements and strengthens it by shortening the period of apprenticeship otherwise necessary, and by giving a broad and practical knowledge of the major principles, policies, and methods of administration.

During the first half of the college study programs the student secures a broad foundation upon which to base the professional and the more technical courses offered in the last half of the course. The managerial and operating points of views are stressed in the advanced courses in production, marketing, labor, finance, real estate, insurance, accounting, secretarial training and public administration. The purpose of the training offered is to aid the student as a prospective executive in developing his ability to identify and to solve administrative and managerial problems; and to adjust himself and his organization, policies, and practices to changing social, political and economic situations.

The aim of the college is to present and illustrate such sound principles of management as are applicable to both big business and small business. Large-scale business, because of its possible economies, will be expanded in some industries under certain well-known conditions. There are, on the other hand, industries and many situations which still call for the small business. If these small-scale businesses are to be operated with profit to the owners and with satisfactory and economical service to the public, it is imperative that authentic principles of administration be applied to them. Sound principles of ethical conduct are emphasized at all times throughout the various courses.

The primary aim of collegiate education for government and business service is to train for effective management. The College of Business and Public Administration, University of Maryland, was established to supply effective training in administration to the young men and women whose task will be the guiding of the more complex business enterprises and governmental units resulting from industrial, social and political development and expansion. This statement does not mean that the graduate may expect to secure a major executive position upon graduation. He will, on the contrary, usually be required to start near the well publicized "bottom" of the ladder and work his way up through a number of minor positions. He will, however, be able to move up at a faster rate if he has taken full advantage of the opportunities offered by the college in developing his talents and in acquiring technical and professional information, point of view, skills, and techniques.

Graduation Requirement

A minimum of 120 semester hours of credit in courses suggested by the College in addition to the specified courses in military science, physical activities and hygiene are required for graduation. The student is required to have a "C" average for all courses used in meeting the quantitative graduation requirements. A student who receives the mark of D in more than one-fourth of his credits must take additional courses or repeat courses until he has met these requirements. The time required to complete the requirements for the bachelors degree for the average student is eight semesters. A superior student, by carrying more than the average load, can complete the work in a shorter period of time.

Degrees

The University confers the following degrees on students of Business and Public Administration: Bachelor of Science, Master of Business Administration, Master of Arts, and Doctor of Philosophy. The College has a number of graduate assistantships in Business Administration, Economics, Geography and Government and Politics available for qualified graduate students. Application for these assistantships should be made directly to the Dean of the College of Business and Public Administration. (See bulletin of Graduate School for graduate rules and regulations.)

Each candidate for a degree must file in the office of the Registrar on a date announced for each semester a formal application for a degree. Candidates for degrees must attend a convocation at which degrees are conferred and diplomas are awarded. Degrees are conferred in absentia only in exceptional cases.

Junior Requirement

To be classified as a junior a student must have earned 56 semester hours of his freshman and sophomore requirements with an average grade of at least "C", plus the required work in military science, hygiene and physical activities for the freshman and sophomore years. If a student has better than a "C" average and lacks a few credits of having the total of 56 he may be permitted to take certain courses numbered 100 and above providing he has the prerequisites for these courses and the consent of the Dean.

Senior Residence Requirement

After a student has earned acceptable credit to the extent of 90 semester hours exclusive of the required work in military science, physical activities, and hygiene, either at the University of Maryland or elsewhere, he must earn a subsequent total of at least 30 semester hours with an average grade of "C" or better at the University of Maryland. No part of these credits may be transferred from another institution.

Programs of Study

The College offers programs of study in economics, business administration, secretarial training, public administration, government and politics, geography, and a number of combination curriculums, e.g., business administration and law, commercial teaching, industrial education, chemistry, agriculture, or basic engineering courses. Research is emphasized throughout the various programs.

Professional Objectives

The executive manager or administrator in modern business enterprises and governmental units and agencies should have a clear understanding of:

- (a) the business organizations and institutions which comprise the modern business world;
- (b) the political, social, and economic forces which tend to limit or to promote the free exercise of his activities; and
- (c) the basic principles which underlie the efficient organization and administration of a business or governmental enterprise.

In addition, the executive or the prospective executive should:

- (a) be able to express his thoughts and ideas in correct and concise English;
- (b) have a knowledge of the fundamental principles of mathematics and the basic sciences, such as physics, chemistry, geology, and geography;
- (c) have a knowledge of the development of modern civilization through a study of history, government, economics, and other social science subjects;
- (d) have a sympathetic understanding of people gained through a study of psychology, sociology, and philosophy.

If the executive is to be successful in solving current business and governmental problems, he should be skilled in the scientific method of collecting, analyzing, and classifying pertinent facts in the most significant manner, and then, on the basis of these facts, be able to draw sound conclusions and to formulate general principles which may be used to guide his present and future conduct. In other words, probably the most important qualities in a successful executive are:

- (a) the ability to arrive at sound judgments;
- (b) the capacity to formulate effective plans and policies, and the imagination and ability to devise organizations, methods, and procedures for executing them.

Facilities Furnished

The teaching staff and the curriculums of the College of Business and Public Administration have been selected and organized for the purpose of providing a type of professional and technical training that will aid the capable and ambitious student in developing his potential talents to their full capacity.

The college study programs on both the undergraduate and graduate levels presuppose effective training in English, history, government, language, science, and mathematics.* The program of study for any individual student may be so arranged as to meet the needs of those preparing for specific lines of work, such as accounting, advertising, banking, foreign trade, industrial administration, marketing administration, personnel administration, real estate practice, insurance, government employment, secretarial work, teaching, and research.

Advisory Councils

In order to facilitate the prompt and continuous adjustment of courses, curriculums, and instructional methods to provide the training most in demand by industry and commerce; and in order constantly to maintain instruction abreast of the best current practice, the advice and suggestions of business men and public officials are constantly sought from outstanding leaders in each major field of business activity. Each council has its own particular interest to serve, such as advertising, marketing, or finance; and the viewpoint and suggestions of these business men are proving to be invaluable in developing the instructional and research programs of the College.

STUDY PROGRAMS IN THE COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION

A student in the College can so arrange his grouping and sequence of courses as to form a fair degree of concentration in one of the Departments. When, however, he wishes to become a *specialist* in any one of the departments, he should plan to continue his studies on to the graduate level, working toward either the Master's or the Doctor of Philosophy degree.

A. BUSINESS ADMINISTRATION

Business organizations are set up primarily for the purpose of *producing* and *distributing* goods and services. Modern business administration requires a knowledge of and skill in the use of effective tools for the control of organizations, institutions, and operations. The curriculums of the Department of Business Organization and Administration emphasize the principles and problems of the development and the use of policies and organizations, and the methods, techniques and procedures of execution, in other words, the essence of Administration and Management.

I. Business Organization and Administration

Study Programs in the Department

Study programs in Business Administration furnish an opportunity for a small amount of concentration in one of the major sections during the undergraduate period. The basis of these curriculums is the general study program.

* The major portion of this training is usually secured in the four years of high school and the first two years of college.

The following suggested study programs will aid the thoughtful student in planning his concentration according to his natural aptitudes and the line of his major interest:

The programs of study in the Department of Business Organization and Administration are so arranged as to facilitate concentrations according to the major functions of business organization. This plan is not, however, based on the assumption that these major divisions are independent units, but rather that each is closely related and dependent on the others. Every student in Business Administration, therefore, is required to complete satisfactorily a minimum number of required basic subjects in economics and in each of the major functional fields. Each graduate upon completion of the requirements for the bachelor's degree finds himself well grounded in the theory and practice of administration. There are five commonly recognized major business functions, viz: production, marketing, finance, labor relations, and control.

The function of control may be thought of as comprising two sectors, viz. internal and external. Internal control has to do with men, materials, and operations. External control is secured through the force of laws and courts, board and commission decisions, also through the influence of custom and public opinion. Management endeavors to make adequate adjustments to these forces. Courses in law and public administration, for example, aid in giving the student an understanding of the problems, devices, and methods of external or "social" control.

FRESHMAN AND SOPHOMORE REQUIREMENTS

During the first half of the program of study each student in the Department of Business Organization and Administration is expected to complete the following basic subjects, except as indicated in a particular curriculum:

<i>Required Courses:</i>	<i>Semester Hours</i>
English, Composition and American and World Literature.....	12
Mathematics, Math. 5 and 6.....	6
Economic Geography 1, 2.....	4
Economic Developments 4, 5.....	4
Organization and Control 10, 11.....	4
Government and Politics 1.....	3
Sociology of American Life 1.....	3
History of American Civilization 5, 6.....	6
Military Training and Physical Activities for Men.....	16
Hygiene and Physical Activities for Women.....	8
Accounting 20, 21.....	8
Speech 18, 19.....	2
Principles of Economics 31, 32.....	6
Total specified requirements	66-74

A minimum of forty per cent of the total number of credits required for graduation must be in subjects with designations other than Business Administration; forty per cent of the required 120 semester hours of academic

work must be in Business Administration subjects, the other twenty per cent may be in either group or comprise a combination of the two groups of subjects. A "C" average in the Business Administration courses is required for graduation.

Freshmen who expect to make a concentration in foreign trade, or who plan to enter public service abroad, should elect an appropriate foreign language.

JUNIOR AND SENIOR REQUIREMENTS

During the junior and senior years each student in the department is required to complete in a satisfactory manner the following specified courses unless the particular curriculum being followed provides otherwise:

Econ. 140—Money and Banking.....	3
B. A. 140—Financial Management.....	3
Econ. 150—Marketing Principles and Organization.....	3
B. A. 150—Marketing Management.....	3
Econ. 160—Labor Economics	3
B. A. 160—Personnel Management.....	3
B. A. 130—Elements of Statistics.....	3
B. A. 180, 181—Business Law I, II.....	8
Total	29

The remaining credits for the juniors and seniors may be used to meet the requirements for one of the special concentration programs, for example, in Public Administration, Foreign Service, Commercial Teaching, and in the fields of Business Administration, such as: Accounting and Statistics, Production Administration, Marketing, Advertising, Retailing, Purchasing, Foreign Trade, Transportation, Labor Relations, Real Estate, Insurance, Investment and General Finance. Juniors and seniors may elect appropriate Secretarial Training courses.

Combined Administration and Law Program

When a student elects the combination Administration-Law curriculum, he must complete in a satisfactory manner the specific requirements listed for the first three years in the College of Business and Public Administration plus enough electives to equal a minimum of 90 credits exclusive of military science, physical activities and hygiene, with an average grade of at least "C". The last year of college work before entering the Law School must be done in residence at College Park. The Bachelor of Science degree from the College of Business and Public Administration is conferred upon the satisfactory completion of the first year in the Law School and the recommendation of the Dean of the Law School. Business Law cannot be used as credit in this combined curriculum.

Master of Business Administration

Candidates for the degree of Master of Business Administration are accepted in accordance with the procedures and requirements for the Graduate School. See Graduate School, Section II.

The General Curriculum in Administration

This curriculum is set up on an eight semester basis which corresponds to the traditional four-year course that leads to a bachelor's degree. A student may complete the full course in a shorter period of time by attending summer sessions. A superior student may, however, complete the course in a shorter period of time by carrying a heavier load each semester.

	—Semester—	
	I	II
<i>Freshman Year</i>		
Geog. 1, 2—Economic Resources.....	2	2
Econ. 4, 5—Economic Developments.....	2	2
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
B. A. 10, 11—Organization and Control.....	2	2
Mathematics 5 and 6.....	3	3
G. & P. 1—American Government (or Sociology of American Life)	3	....
Soc. 1—Sociology of American Life (or American Government).....	....	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
P. E. 42, 44—Hygiene (Women).....	2	2
Physical Activities (Men and Women).....	1	1
Total	18-19	18-19
<i>Sophomore Year</i>		
Eng. 3, 4, or 5, 6—Composition and Readings in Literature.....	3	3
Econ. 31, 32—Principles of Economics.....	3	3
B. A. 20, 21—Principles of Accounting.....	4	4
Speech 18, 19—Introductory Speech	1	1
H. 5, 6—History of American Civilization.....	3	3
Electives (Girls)	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total	17-18	17-18
<i>Junior Year</i>		
Econ. 140—Money and Banking	3	....
B. A. 140—Financial Management .....	....	3
B. A. 130—Elements of Business Statistics.....	3	....
Econ. 150—Marketing Principles and Organization.....	3	....
B. A. 150—Marketing Management .....	....	3
Econ. 160—Labor Economics	3	....
B. A. 160—Personnel Management .....	....	3
Electives in Bus. & Pub. Adm., Economics, or other approved subjects	3	6
Total	15	15
<i>Senior Year</i>		
B. A. 180, 181—Business Law I, II.....	4	4
Econ. 131—Comparative Economic Systems	3	....
Econ. 171—Economics of American Industry.....	....	3
Econ. 142—Public Finance and Taxation.....	3	....
B. A. 189—Government and Business.....	....	3
Electives in Bus. & Pub. Adm., Economics, or other approved subjects	6	6
Total	16	16

Electives may be chosen under the direction of a faculty advisor from courses in Accounting, Statistics, Geography, Public Administration, Secretarial Training, or other courses that will aid the student in preparing for his major objective. The electives indicated in the General Course are provided so that students can arrange their schedules, under the guidance of a faculty advisor, in such a way as to secure a concentration or major when desired in:

- | | |
|------------------------------|----------------------------------|
| 1. Accounting and Statistics | 5. Personnel Administration |
| 2. Financial Administration | 6. Transportation Administration |
| 3. Industrial Administration | 7. Public Administration |
| 4. Marketing Administration | |

1. Accounting and Statistical Control Study Program

Internal control in modern business and governmental organizations is a major over-all administrative function. The rapid growth in size and complexity of current governmental units and business enterprises has emphasized the importance of the problems of control in management. In order to control intelligently and effectively the manifold activities of these units, it is necessary to establish an organization, formulate policies, and develop methods of procedures. In order to perform satisfactorily these managerial activities, it is necessary to have pertinent facts concerning the operations of the various units, divisions, and departments. It is the function of the accounting and statistical departments to secure, analyze, classify, and, to a limited extent, interpret these facts.

This study program is designed to give the student a broad training in administrative control supplemented by specific technical training in the problems, procedures, methods and techniques of accounting and statistics. If the program is followed diligently, the student may prepare himself for a career as a public accountant, tax specialist, cost accountant auditor, budget officer, comptroller, credit manager, or treasurer.

Provision for practical experience. Arrangements have been made with firms of certified public accountants in Baltimore and the District of Columbia for apprenticeship training in the field of public accounting. This training is provided between semesters of the senior year (approximately January 15 to February 15), and for the semester immediately following graduation. A student may also elect to take one semester of apprenticeship training before graduation.

The following study program provides courses for those wishing to concentrate in this important field:

Students who select a concentration in accounting and statistics follow the general study program in the freshman and sophomore years.

<i>Junior Year</i>	—Semester—	
	I	II
B. A. 110, 111—Intermediate Accounting	3	3
B. A. 121—Cost Accounting.....	...	4
B. A. 123—Income Tax Accounting.....	4	....
B. A. 130—Elements of Business Statistics.....	...	3
Econ. 140—Money and Banking.....	3	....
B. A. 140—Financial Management.....	...	3
Econ. 150—Marketing Principles and Organization.....	3	....
B. A. 150—Marketing Management.....	...	3
Econ. 160—Labor Economics	3	....
Total	16	16
<i>Senior Year</i>		
B. A. 160—Personnel Management	3	....
B. A. 124, 126—Advanced Accounting Theory and Practice.....	3	3
B. A. 122—Auditing Theory and Practice.....	3	....
B. A. 127—Advanced Auditing Theory and Practice.....	...	3
B. A. 125—C. P. A. Problems,* or Elective.....	...	3*
B. A. 180, 181—Business Law	4	4
Electives	3	3
Total	16	16

The student interested in this field may select such electives, with the aid of his advisor, from the following list of subjects such courses as will best meet his needs:

B. A. 116—Public Budgeting (3)	B. A. 226—Accounting Systems (3)
B. A. 118—Governmental Accounting (3)	B. A. 228—Research in Accounting (arranged)
B. A. 129—Apprenticeship in Accounting (0)	B. A. 229—Studies of special problems in the fields of Statistical Control (arranged)
B. A. 132, 133—Advanced Business Statistics (3, 3)	Econ. 131—Comparative Economic Systems (3)
B. A. 143—Credit Management (3)	Econ. 132—Advanced Economic Principles (3)
B. A. 165—Office Management (3)	Econ. 134—Contemporary Economic Thought (3)
B. A. 166—Business Communications (3)	
B. A. 183—Law for Accountants (2)	
B. A. 220—Managerial Accounting (3)	
B. A. 221, 222—Seminar in Accounting (arranged)	

2. Financial Administration

A nation with a highly developed industrial system requires an effective financial organization. Production and marketing activities of business enterprises must be financed; a large volume of consumer purchases depend on credit; and the activities of local, state, and federal governments depend, in large part, on taxation and borrowing. To meet these needs a complicated structure of financial institutions, both private and public, has evolved together with a wide variety of financial instruments. The methods used are equally varied and complicated. Since the financing service is so pervasive throughout our economic life and because it is an expense which must be borne by the ultimate purchaser, the management of the finance function is endowed with a high degree of public interest.

* C. P. A. Problems is required only of students who plan to go into public accounting.

This study program is designed to give the student fundamental information concerning financing methods, institutions, and instruments; and to aid him in developing his ability to secure and evaluate pertinent facts, and to form sound judgments with reference to financial matters. Through a wise selection of subjects the student who selects this curriculum may prepare himself for positions in the commercial, savings, and investment banking fields, investment management; corporate financial management; real estate financing; and insurance. A student may qualify himself to enter government service, e.g., in departments regulating banking operations, international finance, the issuance and sales of securities, and a number of financial corporations owned and operated or controlled by the government.

Students wishing to form a concentration in Financial Administration should follow the general study program for the freshman and sophomore years, the program for the junior and senior years is outlined below.

<i>Junior Year</i>	<i>Semester</i>	
	<i>I</i>	<i>II</i>
Econ. 140—Money and Banking.....	3	....
B. A. 140—Financial Management.....	....	3
B. A. 130—Elements of Business Statistics.....	....	3
B. A. 110-111—Intermediate Accounting.....	3	3
B. A. 123—Income Tax Accounting.....	4	....
Econ. 150—Marketing Principles and Organization.....	3	....
B. A. 150—Marketing Management.....	....	8
Electives in Economics, Government and Politics, and Business and Public Administration.....	3	4
Total	16	16
 <i>Senior Year</i>		
B. A. 180, 181—Business Law.....	4	4
B. A. 141—Investment Management.....	3	....
B. A. 143—Credit Management.....	3	....
B. A. 160—Personnel Management.....	....	3
Econ. 160—Labor Economics.....	3	....
B. A. 165—Office Management.....	....	8
Electives.....	3	6
Total	16	16

Selection of electives may be made with the aid of the advisor from the following list of subjects:

B. A. 142—Banking Policy and Practice (3)	Econ. 149—International Finance and Exchange (3)
B. A. 145—Property, Casualty, and Liability Insurance.	Econ. 241—Seminar in Money, Credit and Prices (arranged)
B. A. 147—Business Cycle Theory (3)	B. A. 240—Seminar in Financial Organization and Management (3)
Econ. 141—Theory of Money, Credit and Prices (3)	B. A. 249—Studies of Special Problems in the Field of Financial Administration (arranged)
B. A. 146—Real Estate Financing and Appraisals (2)	
Econ. 142—Public Finance and Taxation (3)	

3. Industrial Administration

This curriculum is designed to acquaint the student with the problems of organization and control in the field of industrial management. Theory and practice with reference to organization, policies, methods, processes, and techniques are surveyed, analyzed, and criticized. The student is required to go on inspection trips, and when feasible is expected to secure first-hand information through both observation and participation. He should be familiar with the factors that determine plant location and layout, types of buildings, and the major kinds of machines and processes utilized; he should understand effective methods and devices for the selection and utilization of men, materials and machines.

The courses, in addition to those required of all students in the college, which will aid the undergraduate student in preparing himself for a useful place in this field of effort are:

- | | |
|--|--|
| *B. A. 121—Cost Accounting (4) | B. A. 170—Transportation I—Regulation of Transportation Services (3) |
| B. A. 122, 127—Auditing (3, 3) | B. A. 171—Transportation II—Services, Rules, and Practices (3) |
| B. A. 132, 133—Advanced Business Statistics (3, 3) | B. A. 172—Transportation III—Motor Transportation (3) |
| B. A. 153—Purchasing Management (3) | *B. A. 177—Motion Economy and Time Study (3) |
| *B. A. 163—Industrial Relations (3) | *B. A. 178—Production Planning and Control (2) |
| B. A. 165—Office Management (3) | |
| B. A. 166—Business Communications (3) | |
| *B. A. 167—Job Evaluation and Merit Rating (2) | |
| *B. A. 169—Industrial Management (3) | |

Industrial Administration students may so arrange their study programs as to take a series of related courses in one of the following fields:

- | | |
|--------------|-----------------------------------|
| 1. Physics | 3. Some basic engineering courses |
| 2. Chemistry | 4. Agriculture |

4. Marketing Administration

Modern business administration is concerned largely with marketing activities. Buying and selling of products and services comprise the major portion of the time and energies of a large group of our population. The ideals of our system of private property, individual initiative and free enterprise are closely related to present-day marketing organization and practice. Effective solutions of the problems of marketing are necessary to the success of the individual business enterprise and for the welfare of the consumer. If the costs of distribution are to be reduced or kept from rising unduly, it is necessary that careful study of the organization, policies, methods, and practices of advertising, selling, purchasing, merchandising, transportation, financing, storing, and other related activities be made, and corresponding appropriate action taken by qualified marketing technicians and executives.

* These courses are specific requirements for students concentrating in Industrial Administration.

The purpose of the marketing administration program of study is to give the alert and serious student an opportunity to analyze, evaluate and otherwise study the problems connected with marketing institutions, organizations, policies, methods, and practices. The student who elects this field of concentration may develop his aptitudes, on the technical level, for research, selling, buying, and preparing advertising copy, and on the administrative level he may develop his abilities for organizing, planning, and directing the various activities in the field of marketing.

Thoughtful selection of courses from the following lists in addition to those required of all students in business administration will aid the student in preparing himself for an effective position in the field of marketing. He may form a concentration in:

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|--|----------------------------|
| a. General Marketing | d. Retail Store Management |
| b. Advertising | e. Sales Management |
| c. Foreign Trade and International Finance | |

- | | |
|--|--|
| B. A. 132, 133—Advanced Business Statistics (3, 3) | B. A. 170—Transportation I—Regulation of Transportation Services (3) |
| *B. A. 151—Advertising Programs and Campaigns (2) | B. A. 171—Transportation II—Services, Rules, and Practices (3) |
| B. A. 144—Life, Group, and Social Insurance (3) | B. A. 172—Transportation III—Motor Transportation (3) |
| *B. A. 152—Copy Writing and Layout (2) | B. A. 250—Problems in Sales Management (3) |
| B. A. 145—Property and Casualty Insurance (2) | B. A. 251—Problems in Advertising (3) |
| *B. A. 153—Purchasing Management (3) | B. A. 252—Problems in Retail Store Management (3) |
| B. A. 147—Business Cycle Theory (3) | B. A. 257—Seminar in Marketing Management (arranged) |
| *B. A. 154—Retail Store Management (4) | B. A. 258—Research in Marketing (arranged) |
| B. A. 143—Credit Management (3) | B. A. 259—Studies of Special Problems in the field of Marketing Policies, Management and Administration (arranged) |
| *B. A. 165—Office Management (3) | B. A. 299—Thesis (3-6 hours) (arranged) |
| B. A. 166—Business Communications (3) | |
| B. A. 156—Real Estate Principles and Practices (2) | |
| B. A. 186—Real Estate Law and Conveyancing (2) | |
| B. A. 146—Real Estate Financing and Appraisals (2) | |

For those especially interested in foreign trade, selections may be made from the following courses:

- | | |
|--|--|
| †Econ. 136—International Economic Policies and Relations (3) | †B. A. 157—Foreign Trade Procedure (3) |
| Econ. 137—Economic Planning and Post-war Problems (3) | †B. A. 170—Transportation I, Regulation of Transportation Services (3) |
| †Econ. 149—International Finance and Exchange (3) | †B. A. 173—Transportation IV, Overseas Shipping (3) |
| B. A. 151—Advertising Programs and Campaigns (2) | B. A. 189—Government and Business (3) |
| | Ee. Geog. 4—Regional Geography of the Continents (3) |

* These courses are specific requirements for students taking a concentration in Marketing.

† These courses are specific requirements for students taking a concentration in Foreign Trade and International Finance.

Geog. 100, 101—Regional Geography of the United States and Canada (3, 3)
 Geog. 102—The Geography of Manufacturing in the United States and Canada (3)
 Geog. 110, 111—Latin America (3, 3).
 Geog. 115—Peoples of Latin America (2)
 Geog. 120—Economic Geography of Europe (3)

Geog. 122—Economic Resources and Development of Africa (3)
 Geog. 130-131—Economic and Political Geog. of Southern and Eastern Asia (3, 3)
 Geog. 180, 181—Principles of Geography (3, 3)
 Geog. 260-261—Problems in the Geog. of Europe and Africa (3, 3)

5. Personnel Administration and Labor Economics

Recent development of large scale operation on the part of both private enterprise and government has emphasized the growing vital importance of personnel relationships. Successful operation depends on harmonious cooperation between employer and employee. The interests of the public, the owners, and the management, as well as those of the employees, may be greatly affected by the solutions evolved in any given case of personnel relationship. The growth of large-scale, centrally controlled labor organizations and the increased participation of governmental agencies in labor disputes have created problems for which business management, union officials, and government representatives have been, on the whole, ill-prepared to solve satisfactorily. The government, the unions, and business need men and women qualified to deal effectively with these problems. They should have broad training and technical information in the fields of business and public administration, economics, and psychology, together with suitable personalities. They must be able to approach these problems with an open mind, unbiased by personal and class prejudices.

Personnel administration which has to do with the direction of human effort, is concerned with securing, maintaining, and utilizing an effective working force. People adequately trained in personnel administration find employment in business enterprises, governmental departments, governmental corporations, educational institutions and charitable organizations.

A student may select from the following courses those which will, in addition to those required of all students in business administration, best prepare him for the kind of personnel work he wishes to enter.

B. A. 162—Contemporary Trends in Labor Relations (3)
 *B. A. 163—Industrial Relations (3)
 *B. A. 164—Recent Labor Legislation and Court Decisions (3)
 Econ. 130—Economics of Consumption (3)
 *B. A. 169—Industrial Management (3)
 G. & P. 111—Public Personnel Administration (3)
 Psych. 2—Applied Psychology (3)
 Psych. 121—Social Psychology (3)
 *B. A. 167—Job Evaluation and Merit Rating (2)

Psych. 161—Psychological Techniques in Personnel Administration (3)
 G. & P. 214—Problems in Public Personnel Administration (arranged)
 B. A. 262—Seminar in Contemporary Trends in Labor Relations (3)
 B. A. 266—Research in Personnel Management (arranged)
 B. A. 269—Studies of Special Problems in Employer-Employee Relationships (arranged)
 B. A. 299—Thesis, 3-6 hours (arranged)

* These courses are specific requirements for those students taking a concentration in Personnel Administration and Labor Economics.

6. Transportation Administration

The problems of transportation administration are complex and far reaching. The student preparing for this type of work should be well grounded in economics, government, and business administration, as well as being proficient in the use of the technical tools of the profession. Rail, highway, water, and air transportation are basic to our economic life, in fact, to our very existence. This curriculum gives considerable emphasis to air transportation.

The following courses, in addition to those required of all students in the Department of Business Organization and Administration, will aid the student in preparing himself for a useful place in the fields of air, water, highway, and railway transportations. Airport management is a rapidly growing new business activity.

*B. A. 170—Transportation I, Regulation of Transportation Services (3)
 B. A. 171—Transportation II, Services, Rules, and Practices (3)
 B. A. 172—Transportation III, Motor, Transportation (3)
 B. A. 157—Foreign Trade.

*B. A. 173—Transportation IV, Overseas Shipping (3)
 *B. A. 174—Commercial Air Transportation (3)
 B. A. 175—Airline Administration (3)
 B. A. 176—Problems in Airport Management (3)

Other courses may be selected with the approval of the advisor for the curriculum.

7. Public Administration

The trend toward increased governmental participation in the fields of our economic, political, and social life has been developing for a number of years but more rapidly in some countries than others. The growth was pronounced in the European countries during the twenties, it grew rapidly in the United States during the thirties and World War II. Thousands of men and women are now employed in developing organizations, evaluating policies, and devising methods and procedures for administering and supervising the manifold governmental activities required in the far-flung scheme of economic and social control. Our government, for example, has now become the largest "business" enterprise in the country. The gigantic task of organization, management and control was undertaken before an adequately qualified personnel could be selected and properly trained. Federal, State, and Local Governments have called upon the universities to aid in training young men and women for effective public service. Graduates who are mentally alert, can think clearly, form critical judgments, express their thoughts and conclusions succinctly, have well-balanced minds, and possess a professional point of view with reference to their work, are needed throughout the government service.

The curriculum in Public Administration is designed primarily to aid in the preparation of young men and women for technical, supervisory, and managerial positions in the various state and federal services. The par-

* These courses are required of students concentrating in Transportation.

ticular selections of subjects in any individual case will depend on the type of position for which the student wishes to prepare. The full course resources of the University are available for this training. Courses, for example, in foreign languages, geography, history, philosophy, and government, as well as studies in social, legal, political, and economic institutions may be advisable in addition to the required courses in Business and Public Administration.

Properly qualified graduates can usually find employment in the field of their major interest. Large numbers of people trained in such technical fields as statistics, accounting, finance, personnel, marketing and transportation are employed by governmental agencies. There is a need for people trained for and interested in the various aspects of research in the social science and business administration fields. Graduates fitted by nature and equipped through proper training and experience for the broader fields of administration and management can find interesting work in governmental units and at the same time satisfy their normal desire to render a special service to society.

Some of the governmental agencies which employ college trained people are given as an illustration of the opportunities available. Many of these are within the classified service. Such independent federal agencies as the Social Security Administration, Federal Reserve Board, Reconstruction Finance Corporation, Tennessee Valley Authority, and the independent regulatory commissions demand the services of many professionally and technically trained people. The Departments of Agriculture, Commerce, Defense, Interior, State, Labor, and Treasury use many college trained men and women. State and local governments also are developing greater need for personnel trained in Administration.

The undergraduate student who expects to make his concentration in the field of Public Administration will find the following curriculum serviceable:

<i>Freshman Year</i>	—Semester—	
	<i>I</i>	<i>II</i>
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
B. A. 10, 11—Organization and Control.....	2	2
Geog. 1, 2—Economic Resources.....	2	2
Econ. 4, 5—Economic Developments	2	2
Mathematics 5, 6	3	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
P. E. 42, 44—Hygiene (Women).....	2	2
Physical Activities (Men and Women).....	1	1
	18-19	18-19
Total.....	18-19	18-19

	Semester	
	I	II
Sophomore Year		
Eng. 3, 4, or 5, 6—Composition and Reading in Literature.....	3	3
Econ. 31, 32—Principles of Economics.....	3	3
H. 5, 6—History of American Civilization.....	3	3
B. A. 20, 21—Principles of Accounting.....	4	4
G. & P. 4—State Government and Administration.....	3	.....
G. & P. 5—Local Government and Administration.....	.....	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total.....	17-20	17-20

Junior Year		
G. & P. 110—Principles of Public Administration.....	3	.....
G. & P. 111—Public Personnel Administration.....	.....	3
G. & P. 112—Public Financial Administration.....	.....	3
Econ. 160—Labor Economics.....	3	.....
Econ. 140—Money and Banking.....	3	.....
B. A. 140—Financial Management.....	.....	3
Econ. 130—Elements of Business Statistics.....	3	.....
Econ. 150—Marketing Principles.....	3	.....
B. A. 132—Advanced Business Statistics.....	.....	3
Speech 18, 19—Introductory Speech.....	1	1
Electives.....	.....	3
Total.....	16	16

Senior Year		
B. A. 189—Government and Business.....	3	.....
Econ. 161—The Government and Social Security.....	.....	3
Econ. 149—International Finance and Exchange.....	.....	3
Econ. 142—Public Finance and Taxation.....	3	.....
Econ. 132—Advanced Economic Principles.....	3	.....
Econ. 134—Contemporary Economic Thought.....	.....	3
G & P. 181—Administrative Law.....	.....	3
Electives (to be selected in terms of the student's primary object with the aid of his advisor).....	6	3
Total.....	15	15

Selection of electives may be made from the following courses:

B. A. 128—Governmental Accounting (3)	G. & P. 231—Seminar in Public Law (3)
B. A. 164—Recent Labor Legislative and Court Decisions (3)	Econ. 235—Seminar in International Economic Relations (3) (arranged)
B. A. 170—Transportation I, Regulation of Transportation Services (3)	Econ. 242—Research in Government Fiscal Policies and Practices (arranged)
B. A. 127—Public Budgeting (3)	B. A. 280—Seminar in Business and Government Relationships (arranged)
H. 135—Constitutional History of the United States (3, 3)	B. A. 284—Seminar in Public Utilities (arranged)
G. & P. 201—Seminar in International Organization (3)	B. A. 299—Thesis (3-6 hours) (arranged)
G. & P. 213—Problems of Public Administration (3)	G. & P. 7, 8, 9, 10—Comparative Government (2, 2, 2, 2)
G. & P. 214—Problems of Public Personnel Administration (3)	G. & P. 101—International Political Relations (3)
G. & P. 216—Seminar in Administrative Planning and Management (3)	G. & P. 102—International Law (3)
G. & P. 217—Government Corporations and Special Purpose Authorities (3)	G. & P. 105—Recent Far Eastern Politics (3)
	G. & P. 131—Constitutional Law (3)

II. BUREAU OF BUSINESS AND ECONOMIC RESEARCH

The Bureau of Business and Economic Research is recognized as the laboratory for the practical study of business and economic problems. As such, it has three principal functions: first, to train students in the field of business and economic research; second, to disseminate information concerning business and economic conditions in Maryland; and third, to make available the facilities and to give active research assistance to interested business firms, governmental units, and citizen groups within the state.

Through the facilities of the Bureau qualified interested students can obtain practical experience in research work. This involves the application of techniques and principles studied in the classroom to actual business and governmental problems.

The Bureau—through its direct contact with business, government, labor and the professions and in its research into problems in these fields—serves as an important source of information relative to business and economic conditions and developments in the state. This information is made available, in part, by means of Bureau publications and, in part, by direct inquiry to the Bureau. This service is supplemented by active cooperation with individual business firms and citizen organizations within the state who request assistance in the study of specific problems which are recognized as having an important bearing on community welfare. The Bureau welcomes the opportunity to be of real service to such organizations.

III. ECONOMICS

The program of studies in the field of Economics is designed to meet the needs of students who wish to concentrate either on a major or minor scale in this division of the Social Sciences. Students who expect to enroll in the professional schools and those who are planning to enter the fields of Business or Public Administration, or Foreign Service, or Social Service Administration, will find courses in economics of considerable value to them in their later work. A student of economics should choose his courses to meet the requirements for his major objective, or the Master of Arts, or a Doctor of Philosophy degree. (He should consult the bulletin of the Graduate School for the general requirements for the advanced degrees.)

Requirements for an Economics Major

A student majoring in Economics is required to complete satisfactorily 120 semester hours of work in addition to the required work in military science, hygiene and physical activities. A general average of at least "C" is required for graduation. A student must maintain at least an average grade of "C" in his major and minor in order to continue in his chosen field.

The specific requirements for the Economics Major are:

I. Econ. 4, 5, 31 and 32—a total of 10 semester hours of specifically required courses in Economics. B.A. 20, 21 (Principles of Accounting) are recommended, and B. A. 130 (Statistics) is required. Other courses in Economics to meet the requirements of a major are to be selected with the aid of a faculty adviser.

II. Social Studies—American Government (3); Sociology of American Life (3); History of American Civilization (6)—a total of 12 semester hours.

III. English—12 semester hours, comprising Eng. 1, 2, and 3, 4; or 5, 6; Speech—2 to 4 semester hours; Speech 18 and 19, 2 semester hours.

IV. Foreign Language and Literature, 12 semester hours in one language. Candidates for the Ph.D. degree are required to have a reading knowledge of two modern foreign languages.

V. Natural Science and Mathematics, 12 semester hours.

VI. Military Science, Hygiene, and Physical Activities. The present University requirement is 16 semester hours in Military Science and Physical Activities for all able-bodied male students; women students are required to take 8 semester hours credit in hygiene and physical activities.

A student who elects economics as a major must have earned 10 semester hours credit in the prerequisite courses in economics prior to his beginning the advanced work of the junior year. These are normally taken during the freshman and sophomore years and must be completed with an average grade of not less than "C". The major sequences are not completed until at least 26 and not more than 40 credits, in addition to the required prerequisite courses, are satisfactorily earned, that is, with an average grade of at least "C".

A minor in economics consists of the 10 prerequisite credits mentioned above plus at least 18 additional credits in economics.

As many as 24 additional semester hours may be taken by the economics students from Business and Public Administration courses.

The specific courses comprising the student's program of studies should be selected with the aid of a faculty advisor in terms of the student's objective and major interest.

Study Program for Economics Majors

<i>Freshman Year</i>	<i>Semester</i>	
	<i>I</i>	<i>II</i>
Speech 18, 19—Introductory Speech	1	1
Econ. 4, 5—Economic Developments	2	2
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
Mathematics 5, 6 or 10 and 11.....	3	3
G. & P. 1—American Government (or Sociology of American Life)...	3	....
Soc. 1—Sociology of American Life (or American Government).....	....	3
Foreign Language	3	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
P. E. 42, 44—Hygiene (Women).....	2	2
Physical Activities (Men and Women).....	1	1
Total	18—19	18—19

	Semester	
	I	II
<i>Sophomore Year</i>		
Econ. 31, 32—Principles of Economics.....	3	3
Eng. 3, 4 or 5, 6—Composition and Readings in Literature.....	3	3
Foreign Language	3	3
Natural Science	3	3
H. 5, 6—History of American Civilization.....	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total	16—19	16—19
<i>Junior Year</i>		
Econ. 140—Money and Banking.....	3	....
Econ. 150—Marketing Principles and Organization.....	3	....
B. A. 130—Elements of Business Statistics.....	....	3
Econ. 160—Labor Economics	3	....
Econ. 131—Comparative Economic Systems.....	....	3
Electives in Economics, Government and Politics, and Business Administration*	6	9
Total	15	15
<i>Senior Year</i>		
Econ. 132—Advanced Economic Principles.....	3	....
Econ. 134—Contemporary Economic Thought .....	....	3
Econ. 171—Economics of American Industries.....	....	3
Econ. 142—Public Finance and Taxation.....	3	....
Electives in Economics, Government and Politics, and Business Administration*	9	9
Total	15	15

IV. OFFICE TECHNIQUES AND MANAGEMENT

1. Office Management

With the rapidly mounting volume of office work now being done, and the rapid increase in the number of office workers required to do it, effective office management and supervision is needed. Despite the current popular opinion that the office manager needs to know only a number of systems and machines, there is an ever-growing group of executives who believe that the management and supervision of an office is quite as important a job as the management of a factory or any other industrial enterprise. Many instances may be cited where the managers of offices have, by a consistent and logical use of scientific management principles, saved as much as \$100,000 a year for their companies.

Any young man or woman entering business today need have no hesitancy in preparing himself for the position of office manager, for that position has proved a stepping stone to positions of great responsibility for many of our present leading executives.

* Other electives may be selected with the approval of the Head of the Department of Economics, but they must be on the Junior and Senior level.

The student interested in this field will find the following required courses with the suggested electives selected under the guidance of the advisor, a valuable aid in preparing for positions in this field.

Office Administration Study Program

	Semester	
	I	II
<i>Freshman Year</i>		
Geog. 1, 2—Economic Resources.....	2	2
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
B. A. 10, 11—Organization and Control.....	2	2
Math 5—General Mathematics	3	....
Math. 6—Mathematics of Finance.....	....	3
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
O. T. 1—Principles of Typewriting.....	2	....
O. T. 2—Intermediate Typewriting.....	....	2
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
P. E. 42, 44—Hygiene (Women).....	2	2
Physical Activities (Men and Women).....	1	1
Total.....	18-19	18-19
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and Readings in Literature.....	3	3
Econ. 31, 32—Principles of Economics.....	3	3
B. A. 20, 21—Principles of Accounting.....	4	4
Speech 18, 19—Introductory Speech.....	1	1
H. 5, 6—History of American Civilization.....	3	3
O. T. 10—Office Typewriting Problems.....	2	....
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total.....	17-19	15-17
<i>Junior Year</i>		
Psych. 1—Introduction to Psychology.....	3	....
Psych. 2—Applied Psychology.....	....	3
Econ. 140—Money and Banking.....	3	....
Econ. 160—Labor Economics	3	....
Econ. 160—Principles of Marketing.....	3	....
B. A. 121—Cost Accounting .....	....	4
O. T. 112—Filing	2	....
B. A. 160—Personnel Management .....	....	3
B. A. 130—Elements of Business Statistics.....	....	3
O. T. 111—Office Machines.....	....	3
Electives	2	....
Total	16	16

<i>Senior Year</i>	<i>Semester</i>	
	<i>I</i>	<i>II</i>
B. A. 180, 181—Business Law	4	4
B. A. 165—Office Management	3	....
B. A. 169—Industrial Management.....	3	....
B. A. 154—Retail Store Management .....	....	3
B. A. 151—Advertising Programs and Campaigns.....	....	2
Electives in Accounting; Marketing; Real Estate; Insurance; Finance; Transportation; and Psychology.....	6	7
Total.....	16	16

2. Office Techniques

In order to meet the growing demand for college trained secretarial and office personnel, the College of Business and Public Administration is offering to both men and women a program of secretarial training courses. The Secretarial Curriculum provides students with the opportunity to obtain the essential background for stenographic, executive and administrative positions. One of the best methods of assuring success in one's chosen profession is through the medium of specialized secretarial service. To this end the courses have been designed. The major objectives of the College will be maintained and emphasized throughout the presentation of the program of studies. The purpose of this curriculum is not only to furnish merely technical or vocational training, but also, to aid the student in developing his natural aptitudes for secretarial and administrative positions. The development of the student's capacity to plan, organize, direct, and execute is the guiding principle followed in this curriculum. This program of study will appeal to the young man or woman who is ambitious, naturally capable, and willing to work. It will also appeal to those who realize that positions in secretarial service require much more than merely skill in typewriting and stenography. These are essential tools, but knowledge and skill in other subjects are as important for the more responsible positions.

Placement Examination

Students with one or more years of college, high school, or equivalent training in shorthand and/or typewriting are required to take a placement examination in those subjects prior to, or at the time of, their first registration in a shorthand or typewriting course at the University.

Based on the results of this examination, the student may be exempt from certain of the beginning courses in either, or both, shorthand and typewriting. Credit will be given only for the work done in residence.

Record of Competency

Students must make a grade of "C" in each course in the Secretarial sequence before they may progress to the next advanced course.

Senior Requirement

A vocational level of competency in business skills is imperative at the time of graduation. As a requirement for graduation, students following the secretarial curriculum must either take T. 16 and T. 17 (or T. 18) within the six-month period preceding graduation, or take a proficiency examination on the material covered in these courses within this six-month period.

The following program of study is designed to give the capable student an opportunity to develop his potential aptitudes to an effective end.

	—Semester—	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
Geog. 1, 2—Economic Resources.....	2	2
Econ. 4, 5—Economic Developments.....	2	2
Math. 5, 6—General Mathematics and Mathematics of Finance.....	3	3
O. T. 1—Principles of Typewriting*.....	2	....
O. T. 2—Intermediate Typewriting.....	....	2
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
P. E. 42, 44—Hygiene (Women).....	2	2
Physical Activities (Men and Women).....	1	1
Total	18-19	18-19
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and Readings in Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Econ. 31, 32—Principles of Economics.....	3	3
O. T. 12, 13—Principles of Shorthand I, II.....	4	4
O. T. 10—Office Typewriting Problems.....	2	....
Speech 18, 19—Introductory Speech.....	1	1
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total	17-20	15-17
<i>Junior Year</i>		
B. A. 10, 11—Organization and Control.....	2	2
B. A. 20, 21—Principles of Accounting.....	4	4
O. T. 16—Advanced Shorthand†	3	....
O. T. 17—Gregg Transcription†	2	....
B. A. 166—Business Communications .....	....	3
O. T. 111—Office Machines	3	....
O. T. 112—Filing .....	....	2
Econ. 140—Money and Banking.....	....	3
Electives	2	2
Total	16	16

* O. T. 1 should be completed prior to enrollment in Principles of Shorthand 1 (O. T. 12).

† O. T. 16, Advanced Shorthand, and O. T. 17, Gregg Transcription, must be taken concurrently.

<i>Senior Year</i>	—Semester—	
	I	II
O. T. 110—Secretarial Work	3	....
O. T. 114—Secretarial Office Practice.....	....	3
B. A. 165—Office Management	3	....
B. A. 180, 181—Business Law.....	4	4
Econ. 160—Labor Economics	3	....
Suggested Elective—Gregg Shorthand Dictation (S. T. 18).....	....	3
Electives .....	....	5
Econ. 150—Marketing Principles and Organization.....	3	....
Total	16	15

Combined Secretarial Training and Business Teaching Curriculum

Capable students may elect courses offered by the College of Education in such a manner as to qualify themselves for commercial teaching in high schools.

Requirements to teach business subjects: Twenty semester hours of prescribed courses in education are required for certification to teach business subjects in Maryland, and 24 semester hours in the District of Columbia.

B. WORLD ECONOMICS AND PUBLIC AFFAIRS

The section of World Economics and Public Affairs comprises three Departments, viz., Government and Politics, Foreign Service and International Relations, and Geography, and the Bureau of Public Administration. The Departments in this section furnish the student an opportunity to work out a major in Government and Politics, or to prepare himself for effective service in some division of our State or Federal Governments, or in the field of International Affairs. Courses leading to the Bachelor's, Master's, and Doctor of Philosophy degrees are offered. The qualified student may so arrange his curriculum as to prepare himself for teaching, research, or for public or private service.

A minimum of 120 semester hours credit, exclusive of Military Science, Physical Activities, and Hygiene, is required for graduation with an average grade of "C" or better and not more than 25 per cent in "D" grades can be counted toward fulfilling the requirement.

I. GOVERNMENT AND POLITICS

Government and Politics Major and Minor Requirements

In addition to the regular university requirements, a student majoring in the field of Government and Politics must meet the following conditions: (1) G. & P. 1, American Government, or its equivalent, is prerequisite to all other courses offered by the Department. All persons majoring in Government and Politics must first complete this course with a grade of C or better. (2) All majors must take 36 hours of Government and Politics, including G. & P. 1. No Government and Politics course with a grade of less than C can be counted as a part of the 36 hours of major work. (3) Each

major must have at least one course in each of five of the following six fields within the Department of Government and Politics: (1) Local Government, (2) Public Administration, (3) Political Theory, (4) Public Policy, (5) Comparative Government and International Affairs, and (6) Public Law.

A minor in Government and Politics consists of a minimum of 18 hours, including G. & P. 1. At least six semester hours must be in courses numbered 100 and above.

	—Semester—	
	I	II
<i>Freshman Year</i>		
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
Math. 5, 6, or 10, 11—Mathematics.....	3	3
Econ. 4, 5—Economic Developments.....	2	2
Speech 18, 19—Introductory Speech.....	1	1
Foreign Language.....	3	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
P. E. 42, 44—Hygiene (women).....	2	2
Physical Activities (Men and Women).....	1	1
Total.....	18-19	18-19
<i>Sophomore Year</i>		
G. & P. 4—State Government and Administration.....	3	....
G. & P. 5—Local Government and Administration.....	....	3
G. & P. 7 or 9—Comparative Government.....	2	....
G. & P. 8 or 10—Comparative Government.....	....	2
Eng. 3, 4, or 5, 6—Composition and Readings in Literature.....	3	3
Foreign Language.....	3	3
Econ. 31, 32—Principles of Economics.....	3	3
H. 5, 6—History of American Civilization.....	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total.....	18-21	18-21
<i>Junior Year</i>		
G. & P. 110—Public Administration.....	3	....
G. & P. 174—Political Parties.....	3	....
G. & P. 124—Legislatures and Legislation.....	....	3
G. & P. 102—International Law.....	....	3
*Electives.....	9	9
Total.....	15	15
<i>Senior Year</i>		
G. & P. 141—History of Political Theory.....	3	....
G. & P. 142 or 144—Recent and American Political Theory.....	....	3
G. & P. 131—Constitutional Law.....	3	....
G. & P. 181—Administrative Law.....	....	3
Econ. 142—Public Finance and Taxation.....	3	....
B. A. 189—Government and Business.....	....	3
*Electives.....	6	6
Total.....	15	15

* Electives are to be chosen under the direction of the Head of the Department.

II. BUREAU OF PUBLIC ADMINISTRATION

The Bureau of Public Administration was organized in 1947. It is closely allied, both in function and personnel, with the Department of Government and Politics. The Department of Government and Politics is the teaching agency; the Bureau of Public Administration is the governmental research agency. The Bureau's activities relate primarily to the problems of state and local government in Maryland. The Bureau engages in research and publishes research findings. It conducts short courses or institutes of government attended by local government officials. It undertakes surveys and offers its assistance and services to units of government in Maryland. Finally, it serves as a clearing house of information for the benefit of Maryland state and local government. Closely associated with the Bureau of Public Administration is the Maryland League of Municipalities, the organization of Maryland cities. The headquarters of the League are maintained in conjunction with the Bureau of Public Administration.

III. FOREIGN SERVICE AND INTERNATIONAL RELATIONS

If the student expects to enter the foreign service he should be well grounded in the language, geography, history, and politics of the region of his anticipated location as well as in the general principles and practices of organization and administration. It should be recognized that only a limited training can be secured during the undergraduate period. When more specialized or more extensive preparation is required, graduate work should be planned. The individual program, in either instance, however, should be worked out under the guidance of a faculty advisor. The following study program is offered as a guide in the selection of subjects.

<i>Freshman Year</i>	—Semester—	
	I	II
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
Foreign Language (Selection)	3	3
Geog. 1, 2—Economic Resources.....	2	2
Econ. 4, 5—Economic Developments.....	2	2
Mathematics 5, 6.....	3	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
P. E. 42, 44—Hygiene (Women).....	2	2
Physical Activities (Men and Women).....	1	1
Total	19-20	19-20

<i>Sophomore Year</i>	(Semester)	
	I	II
Eng. 3, 4 or 5, 6—Composition and Readings in Literature	3	3
Foreign Language (Continuation of Freshman year selection).....	3	3
Econ. 31, 32—Principles of Economics.....	3	3
H. 5, 6—History of American Civilization.....	3	3
G. & P.—Comparative Government, selection in accordance with the student's need	2	2
Sp. 18, 19—Introductory Speech	1	1
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total	16-19	16-19

Junior Year

Econ. 150—Marketing Principles and Organization.....	3	....
Econ. 140—Money and Banking	3	....
Econ. 160—Labor Economics.....	....	3
G. & P. 101—International Political Relations.....	....	3
B. A. 130—Elements of Business Statistics.....	3	....
Econ. 131—Comparative Economic Systems .....	....	3
Ec. Geog.—Selection of Regional division to fit student's needs.....	3	3
Electives to meet student's major interest.....	3	3
Total	15	15

Senior Year

G. & P. 102—International Law	3	....
G. & P. 106—American Foreign Relations .....	....	3
G. & P. 131—Constitutional Law .....	....	3
G. & P. 180—Government and Business.....	....	3
Ec. 132—Advanced Economic Prin., or Ec. 134, Contemporary Econ. Thought	3	....
G. & P. 181—Administrative Law.....	3	....
Econ. 136—International Economic Policies and Relations.....	....	3
Econ. 149—International Finance and Exchange.....	....	3
Electives to meet the needs of the student's major interest.....	3	3
Total	15	15

Suggested electives:

American History 108, 127, 129, 133, 135, 145, and 146.

European History 175, 176, 179, 180, 185, 186, and History 191—History of Russia; History 195—The Far East.

Government and Politics 7, 8, 9, 10, 105, and 154.

IV. GEOGRAPHY

Agriculture, industry, trade, social customs and politics of a given geographical region are influenced to a great extent by the natural resources of that area. Climatic conditions, topography, soils, mineral deposits, water power, and other physical factors largely determine the economic possibilities of a country. The characteristics of the philosophy, political ideals and degrees of technological maturity of the people within a given geographical unit, in turn, determine in large measures the degree of effectiveness with which the natural resources are utilized. The standard of living, the purchasing power, and the political outlook of the inhabitants of a country are, in the main, the result or the expression of the interrelationship existing between the people and their physical environment.

This curriculum is designed to aid the student in securing the facts concerning the major geographical areas of the world and in studying and analyzing causes and results as they affect economic, political, and social activities. The student interested in international trade, international political relations, diplomacy, overseas governments, and national aspirations will find the courses in this department of great practical value. Work is offered on both the undergraduate and the graduate levels. Emphasis is placed on research activity on the part of faculty members and graduate students.

Students who expect to enroll in the engineering and professional schools and those who are planning to enter the fields of Business and Public Administration, or Foreign Service, will find courses in geography of material value to them in their later work. At present there exists a serious lack of well-trained geographers, in government service, in universities, colleges, and high schools, as well as in private business, with demand greatly exceeding the supply. A student of geography should choose his courses to meet the requirements for his major objective, be it an undergraduate major or minor, or a Master of Arts, or a Doctor of Philosophy degree. He should consult the bulletin of the Graduate School for the general requirements for the advanced degrees.

Requirements for a Geography Major:

A student majoring in geography is required to complete satisfactorily 120 semester hours of work in addition to the required work in military science, hygiene, and physical activities. A general average of at least "C" is required for graduation. A student must maintain at least an average grade of "C" in his major and minor in order to continue in his chosen field.

The specific requirements for the geography major are:

I. Geog. 30 and 41 (3, 3); Geog. 60 and 61 (3, 3); and 6 hours in regional geography courses numbered 100 to 149; a total of 18 hours of required courses. Other courses in geography to meet the requirements of a major are to be selected with the aid of a faculty advisor.

II. Social Studies—G. & P. 1 (3); Econ. 31 and 32 (3, 3); History 5 and 6 (3, 3); Soc. 1, 5 (3, 3) and 121 and 122 (3, 3); a total of 27 semester hours.

III. Natural Science—Botany 1 and 102 (4, 3); Soils 1 and 103 (3, 3); Chem. 7 and 9 (3, 3); or 1 and 3 (4, 4). Students specifically interested in meteorology can substitute Physics 1 and 2 (3, 3) or 10 and 11 (4, 4) for Chemistry. A total of 19 or 21 semester hours.

IV. Mathematics—Math. 5, 6 (3, 3), or, according to the interest of the student in meteorology, climatology, and cartography, Math. 10, 11 (3, 3).

V. English—Eng. 1, 2; and 3, 4 or 5, 6—a total of 12 semester hours.

VI. Foreign Language and Literature, 12 semester hours in one language, unless an advanced course is taken. Candidates for the Ph.D. degree are required to have a reading knowledge of two modern languages.

VII. Military Science, Hygiene, and Physical Activities. The present University requirements is 16 semester hours in Military Science and Physical Activities for all able-bodied male students. Women students are required to take 8 semester hours credit in hygiene and physical activities.

A student who elects geography as a major must have earned 12 semester hours credit in the prerequisite courses in geography prior to his beginning the advanced work of the junior year. These are normally taken during the freshman and sophomore years and must be completed with an average grade of not less than "C." The major sequences are not completed until at least 26 or not more than 40 credits, in addition to the required prerequisites, are satisfactorily earned, that is, with the average grade of at least "C."

A minor in geography consists, in addition to the underclass departmental requirements (that is Geog. 1, 2 (2, 2), or Geog. 60, 61 (3, 3); Geog. 30 (3) and Geog. 41 (3), or 12 hours in all) of 12 hours additional credits in geography, or in courses which are judged to be sufficiently closely related by an adviser from the Department of Geography.

For the guidance of graduate students, it should be emphasized that the Department of Geography is particularly interested in the appraisal of natural resources in relation to economic, social and political developments; it aims to encourage study of the natural resource base of the culture of an area. This necessitates, on the one hand, an elementary knowledge of certain of the physical sciences as a basis for the physical aspects of geographic study and resource analysis. On the other hand, a certain amount of knowledge of economics, of sociology and of political organization may be necessary in order to understand stages of resource utilization and the social consequences. The Department believes that for many candidates, for both Master's and Doctor's degrees, a balanced training in the physical and socio-economic aspects of geography is desirable. In specialization, emphasis may be shifted toward the physical side of geography, or toward the socio-economic side, depending upon the preparation, background, interests and intended work of each candidate.

The specific courses comprising the student's program of studies should be selected with the aid of a faculty adviser from the Department of Geography in terms of the student's objective and major interests.

Study Program for Geography Majors:

	Semester	
	I	II
<i>Freshman Year</i>		
Geog. 30—Principles of Physical Geography.....	3	....
Geog. 41—Weather and Climate.....	....	3
Math. 5, 6—General Mathematics and Math. of Finance or for students interested in cartography, meteorology, climatology, Math. 10 and 11	3	3
Chem. 7 and 9 (or 1 and 3)—Introductory Chemistry.....	3(4)	3(4)
G. & P. 1—American Government (or Soc. Amer. Life).....	....	3
Soc. 1—Sociology of American Life (or Amer. Gov't).....	3	....
Eng. 1, 2—Composition and Readings in American Literature.....	3	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
P. E. 42, 44—Hygiene (Women).....	2	2
Physical Activities (Men and Women).....	1	1
Total.....	18-20	18-20
<i>Sophomore Year</i>		
Geog. 60, 61—Economic Geography.....	3	3
Soils 1—General Soils	3	....
Botany 1—General Botany .....	....	4
Econ. 31, 32—Principles of Economics.....	3	3
Eng. 3, 4 or 5, 6—Composition and Readings in Literature.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total.....	15-19	16-19
<i>Junior Year</i>		
Soc. 5—Anthropology	3	....
Bot. 102—Plant Ecology .....	....	3
Soils 103—Soil Geography .....	....	3
Foreign Language	3	3
Geog.—Selection of Regional Courses to Fit Student's Needs.....	3	3
Electives, with adviser's consent.....	6	3
Total.....	15	15
<i>Senior Year</i>		
Soc. 120, 121—Population	3	3
Foreign Language	3	3
Geog.—Selection of Regional Courses to Fit Student's Needs.....	3	3
Electives, with adviser's consent.....	6	6
Total.....	15	15

COURSE OFFERINGS

The University reserves the right to withdraw or discontinue any course for which an insufficient number of students have registered to warrant giving the course. In such an event, no fee will be charged for transfer to another course.

Courses are designated by numbers as follows:

1 to 99: courses for undergraduates.

100 to 199: courses for advanced undergraduates and graduates. (Not all courses numbered 100 to 199 may be taken for graduate credit.)

200 to 299: courses for graduates only.

A course with a single number extends through one semester. A course with a double number extends through two semesters.

Courses not otherwise designated are lecture courses. The number of hours' credit is shown by the arabic numeral in parentheses after the title of the course.

A separate schedule of courses is issued each semester, giving the hours, places of meeting, and other information required by the student in making out his program. Students obtain these schedules when they register.

BUSINESS ORGANIZATION AND ADMINISTRATION

Professors Thatcher, Calhoun, Clemens, Cover, Frederick, Grubb, Pyle, Reid, Watson, Wedeberg; Associate Professors Cook, Hale, McLarney, Mounce, Sweeney, H. Sylvester, Wright; Assistant Professors Cronin, McHugh; Instructors Ash, Cohen, Daiker, Gruber, McKiever, Moeller, Messer, Smith, Woodbury.

B.A. 10, 11. Organization and Control (2,2)—First and second semesters. Required in all Bus. Adm. curriculums.

A survey course treating the internal and functional organization of a business enterprise. B.A. 11 includes industrial management, organization and control.

B.A. 20, 21. Principles of Accounting (4, 4)—First and second semesters. Required in all Business Administration curriculums. Prerequisite, Sophomore standing.

The fundamental principles and problems involved in accounting for proprietorships, corporations and partnerships.

For Advanced Undergraduates and Graduates

B.A. 110, 111. Intermediate Accounting (3, 3)—First and second semesters. Prerequisite, a grade of B or better in B.A. 21, or consent of instructor for majors in accounting.

A comprehensive study of the theory and problems of valuation of assets, application of funds, corporation accounts and statements, and the interpretation of accounting statements.

B.A. 116. Public Budgeting (3)—Prerequisites, B.A. 21 and Econ. 32.

A study of budgetary administration in the United States, including systems of financial control and accountability, the settlement of claims, centralized purchasing and the reporting of financial operations.

B.A. 118. Governmental Accounting (3)—Prerequisite, B.A. 111, or consent of instructor.

The content of this course covers the scope and functions of governmental accounting. It considers the principles generally applicable to all forms and types of governmental bodies and a basic procedure adaptable to all governments. It deals with governmental accounting as a distinct field. It develops and presents the system, taking full account of the conditions governing the agencies and operations carried on by government.

B.A. 121. Cost Accounting (4)—Second semester. Prerequisite, a grade of B or better in B.A. 21, or consent of instructor for majors in accounting.

A study of the fundamental principles of cost accounting including job order, process, and standard cost accounting.

B.A. 122. Auditing Theory and Practice (3)—First semester. Prerequisite, B.A. 111.

A study of the principles and problems of auditing and the application of accounting principles to the preparation of audit working papers and reports.

B.A. 123. Income Tax Accounting (4)—First semester. Prerequisite, a grade of B or better in B.A. 21, or consent of instructor for majors in accounting.

A study of the important provisions of the Federal Tax Law, using illustrative examples, selected questions and problems, the preparation of returns.

B.A. 124, 126. Advanced Accounting (3, 3)—First and second semesters. Prerequisite, B.A. 111.

Advanced accounting theory applied to specialized problems in partnerships, estates and trusts, banks, mergers and consolidations, receiverships and liquidations.

B.A. 125. C.P.A. Problems (3)—Second semester. Prerequisite, B.A. 124, or consent of instructor.

A study of the nature, form and content of C.P.A. examinations by means of the preparation of solutions to, and an analysis of, a large sample of C.P.A. problems covering the various accounting fields.

B.A. 127. Advanced Auditing Theory and Practice (3)—Second semester. Prerequisite, B.A. 122.

Advanced auditing theory, practice and report writing.

B.A. 129. Apprenticeship in Accounting (0)—Prerequisites, minimum of 20 semester hours in accounting and the consent of the accounting staff.

A period of apprenticeship is provided with nationally known firms of certified public accountants from about January 15 to February 15, and for a semester after graduation.

B.A. 130. Elements of Business Statistics (3)—First semester. Prerequisite, junior standing. Required for graduation.

This course is devoted to a study of the fundamentals of statistics. Emphasis is placed upon the collection of data; hand and machine tabulation; graphic charting; statistical distribution; averages; index numbers; sampling; elementary tests of reliability; and simple correlations.

B.A. 131. Statistics Laboratory. Laboratory hours and credit to be arranged. Prerequisite, B.A. 130. (By approval, open to graduate students for work on thesis.)

Through this course the Bureau of Business and Economic Research offers the student an opportunity to do practical work in statistics, business, and economics, under the direction of the Bureau staff.

B.A. 132, 133. Advanced Business Statistics (3, 3)—First and second semesters. Prerequisite, B.A. 130.

The use of statistical methods and techniques in economic studies and in the fields of business and public administration. Advanced methods of correlation and other selected techniques are applied to statistical analyses of economic fluctuations, price changes, cost analysis, and market demand indexes and functions.

B.A. 140. Financial Management (3)—Second semester. Prerequisite, Econ. 140.

This course deals with principles and practices involved in the organization, financing, and reconstruction of corporations; the various types of securities and their use in raising funds, apportioning income, risk, and control; intercorporate relations; and new developments. Emphasis on solution of problems of financial policy faced by management.

B.A. 141. Investment Management (3)—First semester. Prerequisite, B.A. 140.

A study of the principles and methods used in the analysis, selection, and management of investments; investment programs, sources of investment information, security price movements, government, real estate, public utility, railroad, and industrial securities.

B.A. 142. Banking Policies and Practices (3)—Second semester. Prerequisite, Econ. 140.

A study of the organization and management of the Commercial Bank, the operation of its departments, and the methods used in the extension of commercial credit.

B.A. 143. Credit Management (3)—Second semester. Prerequisite, B.A. 140.

A study of the nature of credit and the principles applicable to its extension for industrial, commercial, and consumer purposes; the organization and management of a credit department, and the collection of accounts.

B.A. 144. Life, Group, and Social Insurance (2)—First semester. Prerequisite, Econ. 32 or 37.

A study of the types of life insurance and the basic principles underlying all life insurance relating to reserves, investments, premiums, and regulations.

B.A. 145. Property, Casualty, and Liability Insurance (2)—First semester. Prerequisite, Econ. 32 or 37.

A survey of the insurance coverages written to protect business and personal risks arising from such hazards as fire, windstorm, ocean and inland transportation, fidelity, and liability.

B.A. 146. Real Estate Financing and Appraisals (2)—Second semester. Prerequisites, Econ. 32 or 37, B.A. 156.

A study of the methods used in financing real estate of all types—residential, industrial, and commercial. The fundamental problem of valuation will be studied from the viewpoint of the appraiser. Appraiser technique will be applied in the field.

B.A. 147. Business Cycles (3)—Second semester. Prerequisite, Econ. 140 and senior standing.

A study of the causes of depressions and unemployment, cyclical and secular instability, theories of business cycles, and the problem of controlling economic instability.

B.A. 150. Marketing Management (3)—Second semester. Prerequisite, Econ. 150.

A study of the work of the marketing division in a going organization. The work of developing organizations and procedures for the control of marketing activities are surveyed. The emphasis throughout the course is placed on the determination of policies, methods, and practices for the effective marketing of various forms of manufactured products.

B.A. 151. Advertising Programs and Campaigns (2)—First semester. Prerequisite, B.A. 150.

Deals with the fundamental principles of advertising. Covers the organization and carrying through of advertising campaigns and programs, the selection of ideas, types of appeal and different media, and the method of judging the effectiveness of advertising.

B.A. 152. Advertising Copy Writing and Layout (2)—Second semester. Prerequisite, B.A. 151.

Studies the practices and techniques of copy writing and layout that are useful for those who expect to prepare advertising or to direct the actual production of advertising. Covers the most essential principles of various kinds of copy writing. Surveys the process of production from the original idea to the published advertisement, and analyzes methods of testing its effectiveness.

B.A. 153. Purchasing Management (3)—Second semester. Prerequisite, B.A. 150.

Studies the problems of determining the proper sources, quality and quantity of supplies, and of methods of testing quality; price policies, price forecasting, forward buying, bidding and negotiation; budgets and standards of achievement. Particular attention is given to government purchasing, and methods and procedures used in their procurement.

B.A. 154. Retail Store Management (3)—Second semester. Prerequisite, B.A. 150.

Retail store organization, location, layout and store policy; pricing policies, price lines, brands, credit policies, records as a guide to buying; purchasing methods; supervision of selling; training and supervision of retail sales force; and administrative problems.

B.A. 156. Real Estate Principles and Practice (2)—First semester. Prerequisite, Econ. 32 or 37.

The principles and practices involved in the acquisition and utilization of land and the improvements thereon.

B.A. 157. Foreign Trade Procedure (3)—Prerequisite, B.A. 150

Functions of various exporting agencies; documents and procedures used in exporting and importing transactions. Methods of procuring goods in foreign countries; financing of import shipments; clearing through the customs districts; and distribution of goods in the United States.

B.A. 160. Personnel Management (3)—Second semester. Prerequisite, Econ. 160.

This course deals essentially with functional and administrative relationships between management and the labor force. It comprises a survey of the scientific selection of employees, "in-service" training, job analysis, classification and rating, motivation of employees, employee adjustment, wage incentives, employee discipline and techniques of supervision, and elimination of employment hazards.

B.A. 162. Contemporary Trends in Labor Relations (3)—First semester. Prerequisite, B.A. 160.

A study of contemporary trends in society's effort through legislation, mediation, and other methods to bring about a harmonious relationship between labor and management. Laws and court decisions affecting labor relations are given some consideration.

B.A. 163. Industrial Relations (3)—Second semester. Prerequisite, Econ. 160.

A study of the development and methods of organized groups in industry with reference to the settlement of labor disputes. An economic and legal analysis of labor union and employer association activities, arbitration, mediation, and conciliation; collective bargaining, trade agreements, strikes, boycotts, lockouts, company unions, employee representation, and injunctions.

B.A. 164. Labor Legislation and Court Decisions (3)—Prerequisite, B.A. 160 and senior standing.

B.A. 165. Office Management (3)—First semester. Prerequisite, B.A. 11 or junior standing.

Considers the application of the principles of scientific management in their application to office work.

B. A. 166. Business Communications (3)—Second semester. Prerequisite, junior standing.

The systems of communications used in modern business; techniques of communication forms, administrative memorandums, order, bulletin, digest, reports; communication problems in production, marketing, personnel administration, and public relations.

B. A. 167. Job Evaluation and Merit Rating (2)—Prerequisite B. A. 160.

The investigation of the leading job evaluation plans used in industry, study of the development and administrative procedures, analyzing jobs and writing job descriptions, setting up a job evaluation plan, and relating job evaluation to pay scales. Study of various employee merit rating programs, the methods of merit rating, and the uses of merit rating.

B. A. 169. Industrial Management (3)—Second semester. Prerequisites, B. A. 11 and 160.

Studies the operation of a manufacturing enterprise. Among the topics covered are product development, plant location, plant layout, production planning and control, methods analysis, time study, job analysis, budgetary control, standard costs, and problems of supervision. An inspection trip to a large manufacturing plant is made at the latter part of the semester.

B. A. 170. Transportation I. Regulation of Transportation Services (3)—First semester. Prerequisite, Econ. 32 or 37.

This course is designed for students of Transportation, Public Administration, and General Business. It covers the world practices in the regulation and control of transportation facilities.

B.A. 171. Transportation II. Services, Rules, and Practices (3)—Prerequisite, B.A. 170.

This course treats with the details of classification and rate construction for ground and air transportation. It is designed for students interested in the practical aspects of shipping and receiving. It is primarily a course in industrial and commercial traffic management.

B.A. 172. Transportation III. Motor Transportation (3)—Prerequisite, B.A. 170.

The place of the motor transport industry, development, uses in distribution, competitive situations, organization, regulation.

B.A. 173. Transportation IV. Overseas Shipping (3)—Prerequisite, B.A. 170.

The ocean carrier, development of services, types, trade routes, company organization, ship brokers and freight forwarders, the American Merchant Marine as a factor in national activity.

B. A. 174. Commercial Air Transportation (3)—Prerequisite, B.A. 170.

The air transportation system of the United States: airways, airports, airlines. Federal regulation of air transportation. Problems and services of commercial air transportation: economics, equipment, operations, financing, selling of passenger and cargo services. Air mail development and services.

B. A. 175. Airline Administration (3)—Prerequisite, B.A. 174.

Practices, systems and methods of airline management; actual work in handling details and forms required in planning and directing maintenance, operations, accounting and traffic transactions, study of airline operations and other manuals of various companies.

B. A. 176. Problems in Airport Management (3)—Prerequisite, B.A. 174.

Airports classified, aviation interests and community needs, airport planning, construction, building problems. Airports and the courts. Management, financing, operations, revenue sources.

B. A. 177. Motion Economy and Time Study (3)—Prerequisite B. A. 169.

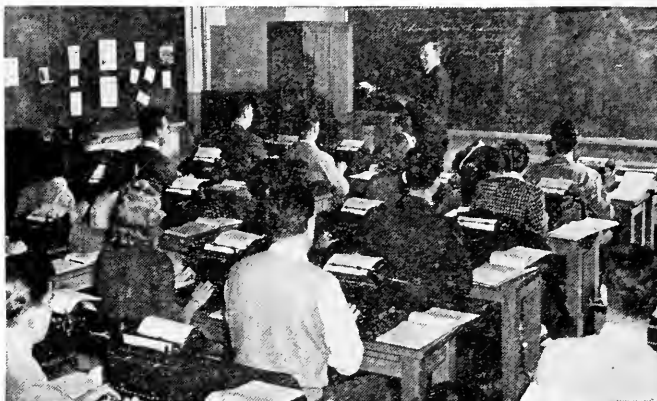
A study of the principles of motion economy, simo charts, micromotion study, the fundamentals of time study, job evaluation, observations, standard times, allowances, formula construction, and wage payment plans.

B. A. 178. Production Planning and Control (2)—Prerequisite B. A. 169.

An analysis of the man-, material-, and machine requirements for production according to the several types of manufacture. The development and application of inventory records, load charts, production orders, schedules, production reports, progress reports and control reports. One lecture period and one laboratory period each week.

B. A. 179. Problems in Supervision (3)—Prerequisite B. A. 169.

A case study course of supervisory problems divided into difficulties with subordinates, with associates and with superiors. The purposes of the



An Accounting Class

course are to apply general principles of industrial management to concrete cases and to extract principles from a study of cases.

B.A. 180, 181. Business Law (4, 4)—First and second semesters. Prerequisite, senior standing. Required in all Bus. Adm. curriculums.

Legal aspects of business relationships, contracts, negotiable instruments, agency, partnerships, corporations, real and personal property, and sales.

B.A. 183. Law for Accountants (2). Prerequisite, B.A. 181.

Principles of law relating to the accounting profession, special emphasis being placed upon sections of the Maryland Annotated Code dealing with accountants, corporations, estates, and trusts.

B. A. 184. Public Utilities (3)—Second semester. Prerequisite, Econ. 32 or 37 and senior standing.

Using the regulated utilities industries as specific examples attention is focused on broad and general problems in such diverse fields as constitutional law, administrative law, public administration, government control of business, advanced economic theory, accounting, valuation and depreciation, taxation, finance, engineering and management.

B.A. 186. Real Estate Law and Conveyancing (2). Prerequisite, B.A. 156 and 180.

This course attempts to cover in a general way those phases of real property law which are of interest not only to real estate dealers but to all business men.

B. A. 189. Business and Government (3)—First semester. Prerequisite, Econ. 32 or 37. Senior standing.

A study of the role of government in modern economic life. Social control of business as a remedy for the abuses of business enterprise arising from the decline of competition. Criteria of and limitations on government regulation of private enterprise.

For Graduates

- B. A. 220. Managerial Accounting (3).
- B. A. 221, 222. Seminar in Accounting—(Arranged.)
- B. A. 226. Accounting Systems (3).
- B. A. 228. Research in Accounting—(Arranged.)
- B. A. 229. Studies of Special Problems in the Fields of Control and Organization—(Arranged.)
- B. A. 240. Seminar in Financial Management (1-3)—Prerequisites, Ec. 140, B. A. 21, B. A. 140.
- B. A. 250. Problems in Sales Management (3).
- B. A. 251. Problems in Advertising (3).
- B. A. 252. Problems in Retail Store Management (3)—(Arranged.)
- B. A. 257. Seminar in Marketing Management—(Arranged.)
- B. A. 258. Research Problems in Marketing—(Arranged.)
- B. A. 262. Seminar in Contemporary Trends in Labor Relations—(Arranged.)
- B. A. 265. Development and Trends in Modern Industrial Management (3).
- B. A. 266. Research in Personnel Management—(Arranged.)
- B. A. 267. Research in Industrial Relations—(Arranged.)
- B. A. 269. Studies in Special Problems in Employer-Employee Relationships—(Arranged.)
- B. A. 270. Seminar in Air Transportation (3).
- B. A. 271. Theory of Organization (3).
- B. A. 277. Seminar in Transportation (3).
- B. A. 280. Seminar in Business and Government Relationships—(Arranged.)
- B. A. 284. Seminar in Public Utilities (3).
- B. A. 299. Thesis—(Arranged.)

ECONOMICS

Professors Ratzlaff, Dillard, and Gruchy; Assistant Professor J. Sylvester; Instructors Cole, Norton, Long, McCalmont, Robinson, Stapleton, Titus.

Econ. 4, 5. Economic Developments (2, 2)—First and second semesters. Freshman requirements in Business Administration Curricula.

An introduction to modern economic institutions—their origins, development, and present status. Commercial revolution, industrial revolution, and

age of mass production. Emphasis on developments in England, Western Europe and the United States.

Econ. 31, 32. Principles of Economics (3, 3)—First and second semesters. Prerequisite, sophomore standing. Required in the Business Administration Curriculums.

A general analysis of the functioning of the economic system. A considerable portion of the course is devoted to a study of basic concepts and explanatory principles. The remainder deals with the major problems of the economic system.

Econ. 37. Fundamentals of Economics (3)—First and second semesters. Not open to students who have credit in Econ. 31, and 32. Not open to freshmen or to B. P. A. students.

A survey study of the general principles underlying economic activity. Designed to meet the needs of special technical groups such as students of Engineering, Home Economics, Agriculture and others who are unable to take the more complete course provided in Economics 31 and 32.

For Advanced Undergraduates and Graduates

Econ. 130. Economics of Consumption (3)—Second semester. Prerequisite, Econ. 32 or 37.

The place of the consumer in our economic system. An analysis of demand for consumer goods. The need for consumer consciousness and a technique of consumption. Cooperative and governmental agencies for consumers. Special problems.

Econ. 131. Comparative Economic Systems (3)—First semester. Prerequisite, Econ. 32 or 37.

An investigation of the theory and practice of various types of economic systems. The course begins with an examination and evaluation of the capitalistic system, and is followed by an analysis of alternative types of economic systems such as fascism, socialism, and communism.

Econ. 132. Advanced Economic Principles (3)—First semester. Prerequisite, Econ. 32.

This course is an analysis of price and distribution theory with special attention being paid to recent developments in the theory of imperfect competition.

Econ. 134. Contemporary Economic Thought (3)—First semester. Prerequisite, Econ. 32.

A survey of recent trends in American, English, and Continental Economic thought with special attention being given to the work of such economists as W. C. Mitchell, J. R. Commons, T. Veblen, W. Sombart, J. A. Hobson and other contributors to the development of economic thought since 1900.

Econ. 136. International Economic Policies and Relations (3)—First semester. Prerequisite, Econ. 32 or 37. Econ. 131 recommended.

This course surveys and analyzes the basic economic, social and political factors that influence governments in the determination of their economic policies and practices in their relationship with other nations.

Econ. 137. Economic Planning and Post-war Problems (3)—Second semester. Prerequisite, Econ. 32 or 37. Econ. 131 recommended.

An analysis of the theory and practice of economic planning in the United States and other countries, and an investigation of the relation of economic planning to postwar economic problems and the stabilization of economic enterprise.

Econ. 140. Money and Banking (3)—First semester. Prerequisite, Econ. 32 or 37.

A study of the organization, functions, and operation of our monetary, credit, and banking system; the relation of commercial banking to the Federal Reserve System; the relation of commercial banking to the Federal Reserve System; the relation of money and credit to prices; domestic and foreign exchange, and the impact of public policy upon banking and credit.

Econ. 141. Theory of Money, Credit, and Prices (3)—Second semester. Prerequisites, Econ. 32 and 140.

A study of recent developments in the theory of money and credit, of domestic and international price problems, and of monetary and credit policies in their relation to the problem of full employment.

Econ. 142. Public Finance and Taxation (3)—First semester. Prerequisite, Econ. 32 or 37.

A study of government fiscal policy in regard to the nature of public expenditures, sources of public revenue, the tax system, the public debt, and government budgets.

Econ. 149. International Finance and Exchange (3)—Second semester. Prerequisite, Econ. 140, Econ. 141 recommended.

This course considers the theory and practice of international finance and exchange. The increased importance of public authority in foreign trade, international policies, and finance is given due emphasis.

Econ. 150. Marketing Principles and Organization (3)—First semester. Prerequisite, Econ. 32 or 37.

This is an introductory course in the field of marketing. Its purpose is to give a general understanding and appreciation of the forces operating, institutions employed, and methods followed in marketing agricultural products, natural products, services, and manufactured goods.

Econ. 151. Economics of Cooperatives (2)—Second semester. Prerequisite, Econ. 32 or 37.

Analysis of and contrast between economic problems and contributions of cooperative and other types of business organizations; the significance of cooperation in the free enterprise system. Nominal fees are collected to cover the expense of occasional field trips.

Econ. 160. Labor Economics (3)—First and second semesters. Prerequisite, Econ. 32 or 37.

The historical development and chief characteristics of the American labor movement are first surveyed. Present day problems are then examined in detail: wage theories, unemployment, social security, labor organization, collective bargaining.

Econ. 161. Government and Social Security (3)—Second semester. Prerequisite, G. & P. 4, Econ. 32.

An analysis of the Federal Social Security Act with special emphasis upon the background, purposes, administration, and deficiencies. Attention will be given also to employment assurance and relief agencies and policies, and to the efforts of European countries and the 48 states to provide a greater measure of security.

Econ. 170. Monopoly and Competition (3)—Second semester. Prerequisite, Econ. 32 or 37.

Growth of large-scale production, development of industrial combinations, the economies of vertical and horizontal combination, the anti-trust acts, and some conclusions as to policy in relation to competition and monopoly. Problems of small business.

Econ. 171. Economics of American Industry (3)—Second semester. Prerequisite, Econ. 32 or 37.

A study of the technology, economics and geography of twenty representative American industries.

For Graduates

Econ. 230. History of Economic Thought (3)—Second semester. Prerequisite, Econ. 132.

A study of the development of economic thought and theories including the Greeks, Romans, canonists, mercantilists, physiocrats, Adam Smith, Malthus, Ricardo. Relation of ideas to economic policy.

Econ. 231. Economic Theory in the Nineteenth Century (3)—Second semester. Prerequisite, Econ. 230 or consent of the instructor.

A study of various nineteenth and twentieth century schools of economic thought, particularly the classicists, neo-classicists, Austrians, German historical school, American economic thought, and the socialists.

Econ. 235. Seminar in International Economic Relations (3)—(Arranged.)

A study of selected problems in International Economic Relations.

Econ. 237, 238. Seminar in Economic Investigation (3,3)—First and second semesters.

Econ. 240. Comparative Banking Systems (3)—Second semester.

Econ. 242. Research in Governmental Fiscal Policies and Practices (3)—(Arranged.)

Individual research under faculty guidance of special problems in the field of government finance and taxation.

Econ. 270. Seminar in Economics and Geography of American Industries (3)—arranged.

Econ. 299. Thesis—arranged.

GEOGRAPHY

Professors Baker, Crist, Hu, Van Royen; Consulting Professors Joerg, Thornthwaite; Assistant Professors Baum, Karinen; Instructors Anderson, Hickman, Watson; Lecturers Aiken, Brierly, Davies, Skop; Research Professor Bowles; Research Associates Battersby, Burstow; Research Assistants Hubert, Kelley.

Geog. 1, 2. Economic Resources (2, 2)—First and second semesters. One lecture and one two-hour laboratory period a week for Geog. 1; two lecture periods for Geog. 2. Freshman requirement in the Business Administration Curriculums.

General comparative study of the geographic factors underlying production economics. Emphasis upon climate, soils, land forms, agricultural products, power resources, and major minerals, concluding with brief survey of geography of commerce and manufacturing. (Staff.)

Geog. 4. Regional Geography of the Continents I. The New World (2)—First semester.

Study of the Americas with emphasis upon human geography and the underlying physical factors. Discussion of some of the major problems arising therefrom. Of particular value to students in the field of education. (Watson.)

Geog. 5. Regional Geography of the Continents II. The Old World (2)—Second semester.

Study of Europe, Asia, Africa and Australia with emphasis on human geography and the underlying physical factors. Discussion of some of the major problems resulting therefrom. Intended especially for students and teachers in the field of education. (Watson.)

Geog. 20. Elementary Cartography (2)—First or second semester. One lecture and one two-hour laboratory period a week.

Principles of cartography and study in laboratory and in the field of various types of maps and related means of presenting geographic materials. (Karinen)

Geog. 30. Principles of Physical Geography (3)—First semester.

A systematic study of the physical features of the earth's surface, including subordinate land forms. The course is designed to give an understanding of major physiographic processes and of the genesis of various types of land forms. (Van Royen.)

Geog. 31. Problems of Cartographic Representation (3)—First or second semester. Two hours lecture and two hours laboratory a week. Prerequisite Geog. 20 and 30, or equivalent.

Introduction to theory of projections. Study of principles and problems of representation of natural features according to map scales, and of generalization and symbolization; also of classification, representation, and generalization of cultural features, including place-name selection.

(Davies, Army Map Service.)

Geog. 41. Introductory Meteorology (3)—Second semester.

A course of general cultural interest, basic to any further work in climatology, and intended to acquaint students in such fields as agriculture, aeronautics, civil engineering, and physics with the basic facts and concepts relating to the atmosphere. (Baum.)

Geog. 60, 61. Economic Geography (3, 3)—First and second semesters. Can be taken by students in the Division of World Economics and Public Affairs instead of Geog. 1 and 2; required for all major and minors in geography; recommended for students in the social sciences.

A comparative study of the geographic factors which enter into the economies of regions or countries. (Staff)

Geog. 90. Problems of Cartographic Procedure (3)—First or second semester. Two hours lecture and two hours laboratory a week. Prerequisite Geog. 30.

Study of compilation methods and their relationship to drafting and reproduction methods, including basic concepts of compilation, criteria used in the selection of methods of transfer, relationships of reproduction methods to the degree of accuracy, drafting methods in compilation and in color-separation work, and analysis of type styles and their uses.

(Skop, Army Map Service.)

For Advanced Undergraduates and Graduates

Geog. 100, 101. Regional Geography of the United States and Canada (3, 3)—First and second semesters. Prerequisites, Geog. 1, 2 or Geog. 60, 61, or permission of instructor.

The climate, land forms, soils and minerals, forests, agriculture, industries, and commerce; the people and their occupations, by regions. Several all-day field trips are required. (Baker.)

Soc. 120, 121. Population. See Sociology. (Baker.)

Geog. 102. The Geography of Manufacturing in the United States and Canada (3)—First semester.

The geographic factors which are associated with the location of manufacturing industries. One or more field trips. (Clemens.)

Geog. 110, 111. Latin America (3, 3)—First and second semesters.

Regional geography of the Latin American republics; an analysis of the physical environment and the natural resources, and a survey of the historical and cultural development. (Crist.)

Geog. 115. The Peoples of Latin America (2)—Second semester.

Population distribution, composition and growth, trends in fertility and mortality; migration, rural-urban and interregional, cultural, ethnic and political aspects. (Crist and Lecturer.)

Geog. 120. Economic Geography of Europe (3)—First semester.

The natural resources of Europe in relation to agricultural and industrial development and to present-day economic and national problems. (Van Royen.)

Geog. 122. Economic Resources and Development of Africa (3)—Second semester.

The natural resources of Africa in relation to agricultural and mineral production; the various stages of economic development and the potentialities of the future. (Van Royen.)

Geog. 123. Problems of Colonial Geography (3)—First or second semester.

Problems of development of colonial areas, with special emphasis upon the development of tropical regions and the possibilities of white settlement in the tropics. (Van Royen.)

Geog. 130, 131. Economic and Political Geography of Southern and Eastern Asia (3, 3)—First and second semesters.

A study of China, Japan, India, Burma, Indo-China and the Dutch East Indies; natural resources, population and economic activities. Comparisons of physical and human potentialities of major regions and of their economic, social, and political development. (Hu.)

Geog. 140, 141. Soviet Lands (3, 3)—First and second semesters.

The natural environment, geographic factors in the expansion of the Russian State, the geography of agriculture, of industry and of transport, concluding with the regional geography of the U. S. S. R.

Geog. 150. Problems of Map Evaluation I. Topographic Maps (3)—First or second semester. Two hours lecture and two hours laboratory a week. Prerequisite Geog. 30.

Review of status of topographic mapping with consideration of important schools of topographic concepts and practices. Theoretical and practical

means of determining map reliability and utility, including studies of map coverage. Emphasis on methods of preparation of data for compilation purposes, including a study of types of source materials. Methods of map cataloging and bibliography are given brief consideration.

(Davies, Army Map Service.)

Geog. 151. Problems of Map Evaluation II. Non-topographic Special-use Maps (3)—First or second semester. Two-hour lecture and two hours laboratory a week. Prerequisite, Geog. 150.

Deals exclusively with non-topographic special-use types of maps such as military-geographic, military-geologic, climatic, pedologic, isogonic, economic, water supply, terrain appreciation maps, etc.

(Brierly, Army Map Service.)

Geog. 152. Problems and Practices of Photo Interpretation (3)—Off campus. First and second semesters. Two-hour lecture and two hours laboratory a week. Prerequisite, Geog. 31, or equivalent.

Reading and interpretation of aerial photographs with emphasis on topographic features. Study of limitations of photo interpretations. Interpretations of soil, geologic, vegetation and military data.

Geog. 160. Elementary Toponymy (3)—First and second semesters. Prerequisites Geog. 30 and one foreign language.

Problems of place-name analysis as related to cartography, especially those involved in making and interpreting foreign maps, the language aspects of gazetteers, and the problems of compilation of cartographic dictionaries. The course will close with a review of the linguistic aspects of air charts, hydrographic charts and the International Map of the World.

(Aiken, Army Map Service.)

Geog. 162. Fundamentals of Climatology (3)—First semester. Prerequisite, Geog. 41 or consent of instructor.

Introduction to climatology, stressing the causes of the climates in terms of the geography of the globe, radiation balance, motions of the atmosphere, air masses and fronts. Definition and properties of basic statistical concepts employed in climatology.

(Baum.)

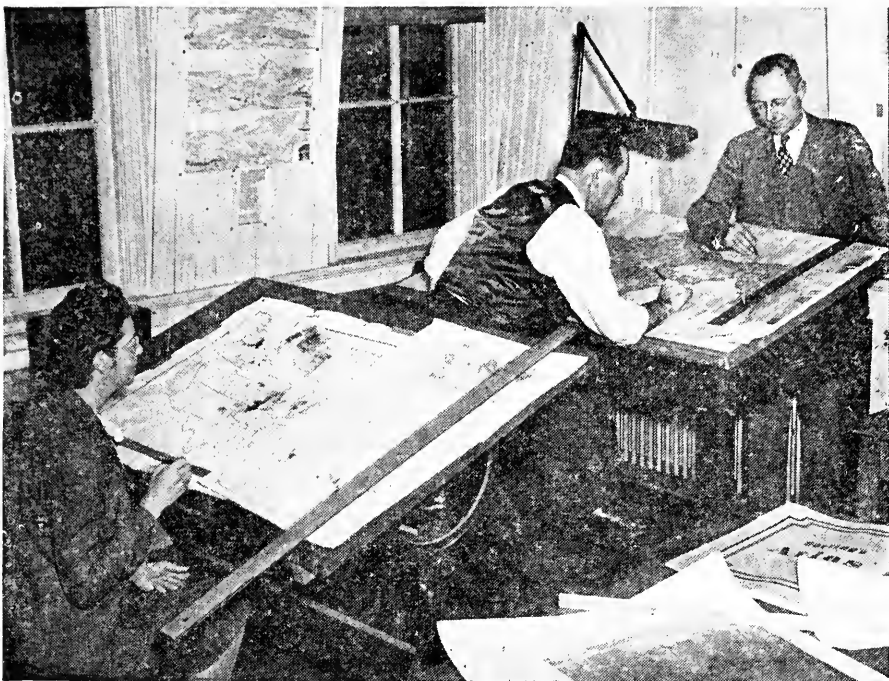
Geog. 170. Field Studies in Geography (3)—First semester and approximately three weeks or six weeks in the field immediately preceding the academic year. Required of undergraduate majors in geography and graduate students who are candidates for higher degrees in geography.

Field studies of small areas for training in geographic methods of field observation and the writing of reports; alternate years transcontinental trip thru major regions of United States.

(Staff)

Geog. 180, 181. History, Nature and Methodology of Geography (3, 3)—First and second semesters.

A comprehensive and systematic study of the history, nature, and basic principles of geography, with special reference to the major schools of



A Corner of the Drafting Room of the Department of Geography

geographic thought; a critical evaluation of some of the important geographical works and methods of geographic research. (Hu.)

Geog. 190, 191. Pro-Seminar in Geography (3, 3).

Special studies in various aspects of geography. (Staff.)

For Graduates

Geog. 210. Seminar in Cartography (credit arranged)—First or second semester.

The historical and mathematical background of cartographic concepts, practices and problems, and the various philosophical and practical approaches to cartography. Discussions will be supplemented by the presentation of specific cartographic problems investigated by the students.

(Karinen and Davies.)

Geog. 220. Geomorphology (3)—Second semester.

An advanced comparative study of selected geomorphic processes and land forms; theories of land forms evolution and geomorphological problems. (Van Royen.)

Geog. 230. Micro-Climatology (3)—First semester. Prerequisite, Geography 162 or consent of instructor.

The climate of the layer of air near the ground in which plants live and related topics. (Baum)

Geog. 231. Advanced General Climatology (3)—Second semester. Prerequisite, Geog. 162 or consent of instructor.

Selected topics in climatology illustrating principles, techniques and the distribution of climate. (Baum.)

Geog. 248, 249. Special Studies in Meteorology and Climatology (3, 3)—Prerequisite, consent of instructor.

Selected topics in meteorology and climatology chosen to fit the individual needs of advanced students. (Baum)

Geog. 250, 251. Recent Trends in Latin American Economies (3, 3)—First and second semesters.

An analysis of recent changes and trends in industrial development, exploitation of mineral resources and land utilization. (Crist.)

Geog. 260, 261. Problems in the Geography of Europe and Africa (3, 3)—First and second semesters.

Analysis of special problems concerning the resources and development of Europe and Africa. (Van Royen.)

Geog. 270, 271. Special Studies in the Geography of China (3, 3)—First and second semesters.

Analysis of problems concerning the geography of China, with emphasis on techniques peculiar to Chinese geographical research. (Hu.)

Geog. 290, 291. Seminar in Geography (Credit to be arranged)—First and second semesters.

Special directed studies in various aspects of geography. (Staff.)

Geog. 292, 293. Research Work (Credit to be arranged)—First and second semesters and summer.

A. E. 212. Land Utilization and Agricultural Production—See *Agricultural Economics*. (Baker.)

In addition to individual research projects, the preparation of the "Atlas of the World's Resources," a joint project of the University of Maryland, the United States Department of Agriculture, and the Department of the Interior, as well as cooperative projects with other government departments, provide facilities for graduate students to study under the guidance of experts in government service. The University of Maryland is cooperating also with the National Central University, in Nanking, China, in the preparation of an "Atlas of China." These atlases and other projects in preparation, may provide a vehicle of publication for parts of students' research work.

GOVERNMENT AND POLITICS

Professors Ray, Burdette, Mauck, and Steinmeyer; Assistant Professors Dixon and Plischke; Instructors Gass, Hester, Magner, Moser, and Spurgeon.

G. and P. 1. American Government (3)—Each semester.

This course is designed as the basic course in government for the American Civilization program, and it or its equivalent is a prerequisite to all other courses in the Department. It is a comprehensive study of governments in the United States and of their adjustment to changing social and economic conditions.

G. and P. 4. State Government and Administration (3)—First semester.
Prerequisite, G. & P. 1.

A study of the organization and functions of state government in the United States, with special emphasis upon the government of Maryland.

G. and P. 5. Local Government and Administration (3)—Second semester. Prerequisite G. & P. 1.

A study of the organization and functions of local government in the United States, with special emphasis upon the government of Maryland cities and counties.

G. and P. 7. The Government of the British Empire (2)—First semester.
Prerequisite G. & P. 1.

A study of the governments of the United Kingdom and the British Dominions.

G. and P. 8. The Governments of Continental Europe (2)—Second semester. Prerequisite G. & P. 1.

A comparative study of the governments of France, Switzerland, Italy, Germany, and the Scandinavian countries.

G. and P. 9. The Governments of Latin America (2)—First semester.
Prerequisite G. & P. 1.

A comparative study of Latin American governments, with special emphasis on Argentina, Brazil, Chile, and Mexico.

G. and P. 10. The Governments of Russia and the Far East (2)—Second semester. Prerequisite G. & P. 1.

A study of the governments of Russia, China, and Japan.

For Advanced Undergraduates and Graduates

G. and P. 101. International Political Relations (3)—First semester.
Prerequisite G. & P. 1.

A study of the major factors underlying international relations, the influence of geography, climate, nationalism, and imperialism, and the development of international organization, with emphasis on the United Nations.



Staff of the Bureau of Business and Economic Research

G. and P. 102.—International Law (3)—Second semester. Prerequisite G. & P. 1.

A study of the principles governing international intercourse in times of peace and war, as illustrated in texts and cases.

G. and P. 105. Recent Far Eastern Politics (3)—First semester. Prerequisite G. & P. 1.

The background and interpretation of recent political events in the Far East and their influence on world politics.

G. and P. 106. American Foreign Relations (3)—Second semester. Prerequisite G. & P. 1.

The principles and machinery of the conduct of American foreign relations, with emphasis on the Department of State and the Foreign Service, and an analysis of the major foreign policies of the United States.

G. and P. 110. Principles of Public Administration (3)—First semester. Prerequisite G. & P. 1.

A study of public administration in the United States, giving special attention to the principles of organization and management and to fiscal, personnel, planning, and public relations practices.

G. and P. 111. Public Personnel Administration (3)—First semester. Prerequisite G. & P. 110.

A survey of public personnel administration, including the development of merit civil service, the personnel agency, classification, recruitment, examination techniques, promotion, service ratings, training, discipline, employee relations, and retirement.

G. and P. 112. Public Financial Administration (3)—Second semester. Prerequisite G. & P. 110 or Econ. 142.

A survey of governmental financial procedures, including processes of current and capital budgeting, the administration of public borrowing, the techniques of public purchasing, and the machinery of control through pre-audit and post-audit.

G. and P. 124. Legislatures and Legislation (3)—Second semester. Prerequisite G. & P. 1.

A comprehensive study of legislative organization, procedure, and problems. The course includes opportunities for student contact with Congress and with the legislature of Maryland.

G. and P. 131, 132. Constitutional Law (3, 3)—First and second semesters. Prerequisite G. & P. 1.

A systematic inquiry into the general principles of the American constitutional system, with special reference to the role of the judiciary in the interpretation and enforcement of the federal constitution; the position of the states in the federal system; state and federal powers over commerce; due process of law and other civil rights.

G. and P. 133. Administration of Justice (3)—Second semester. Prerequisite G. & P. 1.

An examination of civil and criminal court structure and procedures in the United States at all levels of government, with special emphasis upon the federal judiciary.

G. and P. 141. History of Political Theory (3)—First semester. Prerequisite G. & P. 1.

A survey of the principal political theories set forth in the works of writers from Plato to Bentham.

G. and P. 142. Recent Political Theory (3)—Second semester. Prerequisite G. & P. 1.

A study of 19th and 20th century political thought, with special emphasis on recent theories of socialism, communism and fascism.

G. and P. 144. American Political Theory (3)—First semester. Prerequisite G. & P. 1.

A study of the development and growth of American political concepts from the colonial period to the present.

G. and P. 154. Problems of World Politics (3)—Second semester. Prerequisite G. & P. 1.

A study of governmental problems of international scope, such as causes of war, problems of neutrality, and propaganda. Students are required to report on readings from current literature.

G. and P. 174. Political Parties (3)—First semester. Prerequisite G. & P. 1.

A descriptive and analytical examination of American political parties, nominations, elections, and political leadership.

G. and P. 178. Public Opinion (3)—First semester. Prerequisite G. & P. 1.

An examination of public opinion and its effect on political action, with emphasis on opinion formation and measurement, propaganda, and pressure groups.

G. and P. 181. Administrative Law (3)—Second semester. Prerequisite G. & P. 1.

A study of the discretion exercised by administrative agencies, including analysis of their functions, their powers over persons and property, their procedures, and judicial sanctions and controls.

For Graduates

G. and P. 201. Seminar in International Political Organization (3).

A study of the forms and functions of various international organizations.

G. and P. 211. Seminar in Federal-State Relations (3).

Reports on topics assigned for individual study and reading in the field of recent federal-state relations.

G. and P. 213. Problems of Public Administration (3).

Reports on topics assigned for individual study and reading in the field of public administration.

G. and P. 214. Problems of Public Personnel Administration (3).

Reports on topics assigned for individual study and reading in the field of public personnel administration.

G. and P. 216. Government Administrative Planning and Management (3).

Reports on topics assigned for individual study and reading in administrative planning and management in government.

G. and P. 217. Government Corporations and Special Purpose Authorities (3).

Reports on topics assigned for individual study and reading in the use of the corporate form for governmental administration. The topics for study will relate to the use of the corporate form as an administrative technique, as in the cases of the Tennessee Valley Authority, the Port of New York Authority, and local housing authorities.

G. and P. 221. Seminar in Public Opinion (3).

Reports on topics assigned for individual study and reading in the field of public opinion.

G. and P. 224. Seminar in Political Parties and Politics (3).

Reports on topics assigned for individual study and reading in the fields of political organization and action.

G. and P. 225. Man and the State (3).

Individual reading and reports on such recurring concepts in political theory as liberty, equality, justice, natural law and natural rights, private property, sovereignty, nationalism, and the organic state.

G. and P. 231. Seminar in Public Law (3).

Reports on topics assigned for individual study and reading in the fields of constitutional and administrative law.

G. and P. 251. Bibliography of Government and Politics (3).

Survey of the literature of the various fields of government and politics and instruction in the use of government documents.

G. and P. 261. Research in Government and Politics (3).

Credit according to work accomplished.

G. and P. 281. Departmental Seminar (No Credit).

Topics as selected by the graduate staff of the department. Registration for two semesters required of all doctoral candidates. Conducted by the entire departmental staff in full meeting.

G. and P. 299. Thesis Course (Arranged).**OFFICE TECHNIQUES AND MANAGEMENT**

Associate Professor Patrick; Instructors Brooks, O'Neill and Wagner.

O. T. 1. Principles of Typewriting (2)—First and second semesters. Five laboratory periods per week. Laboratory fee, \$7.50.

The goal of this course is the attainment of the ability to operate the typewriter continuously with reasonable speed and accuracy by the use of the "touch" system. This course should be completed prior to enrollment in O. T. 12, Principles of Shorthand.

O. T. 2. Intermediate Typewriting (2)—First and second semesters. Five periods per week. Laboratory fee, \$7.50. Prerequisite, minimum grade of "C" in O. T. 1 or consent of instructor.

The aim of this course is to teach the fundamentals of letter writing and to continue the development of speed typing. Problems in business letter styles and forms, arrangement of letters, tabulation, and exercises for improving stroking skill will be used.



A Class in Typing

O. T. 10. Office Typewriting Problems (2)—First and second semesters. Five periods per week. Laboratory fee, \$7.50. Prerequisite, minimum grade of "C" in O. T. 2 or consent of instructor.

In this course the aims are to develop the highest degree of accuracy and speed possible for each student and to teach the advanced techniques of typewriting with special emphasis on production.

O. T. 12, 13. Principles of Shorthand (4, 4)—First and second semesters. Five periods per week. Prerequisite, O. T. 1, and consent of instructor.

This course aims to develop the mastery of the principles of Gregg Shorthand. The reading approach is used, stressing reading and writing from copy and dictation.

***O. T. 16. Advanced Shorthand (3)**—First semester. Five periods per week. Prerequisite, minimum grade of "C" in O. T. 13 and O. T. 2 or consent of instructor.

Advanced principles and phrases of shorthand; dictation covering vocabularies of representative businesses; development of dictation skill to maximum for each individual.

O. T. 17. Gregg Transcription (2)—First semester. Four periods per week. Laboratory fee \$7.50. Prerequisite, minimum grade of "C" in O. T. 13 and O. T. 2 or consent of instructor. This course is to be taken concurrently with O. T. 16.

A course in intensive transcriptional speed building, and in the related skills and knowledges.

* O. T. 10 should be completed prior to enrollment in Advanced Shorthand (O. T. 16); O. T. 16, Advanced Shorthand, and O. T. 17, Gregg Transcription, must be taken concurrently.



The University of Maryland enjoys a favorable location for students of Business, Government and Politics, Economics, Public Administration, Geography, Foreign Service and International Relations. Washington, D. C., is only twenty-five minutes away; Baltimore less than an hour. Above, Maryland students are shown in Washington.

O. T. 18. Gregg Shorthand Dictation (3)—Second semester. Five periods per week. Prerequisite, minimum grade of "C" in O. T. 16 and O. T. 17, or consent of instructor.

A special course in shorthand speed building with emphasis placed on the development of a special shorthand vocabulary.

O. T. 110. Secretarial Work (3)—First semester. Six periods per week. Prerequisite, O. T. 111 and O. T. 112 or consent of instructor.

This course is designed to cover specific and general information in addition to the stenographic skills, needed by a secretary. Units will be assigned on communication procedures and cost, installation and revision of files, selection of office equipment and supplies, editorial duties, compilation of statistical data, and use of reference books. It is assumed that stenographic skills are obtained from other sources.

O. T. 111. Office Machines (3)—First and second semesters. Six periods per week. Prerequisites, O. T. 2 and junior standing. Laboratory fee, \$7.50.

A course designed to give the students training in the use of modern office devices—duplicators, calculators, voice writing machines, and other common office appliances. Some attention is given to supervision of small groups of office workers.

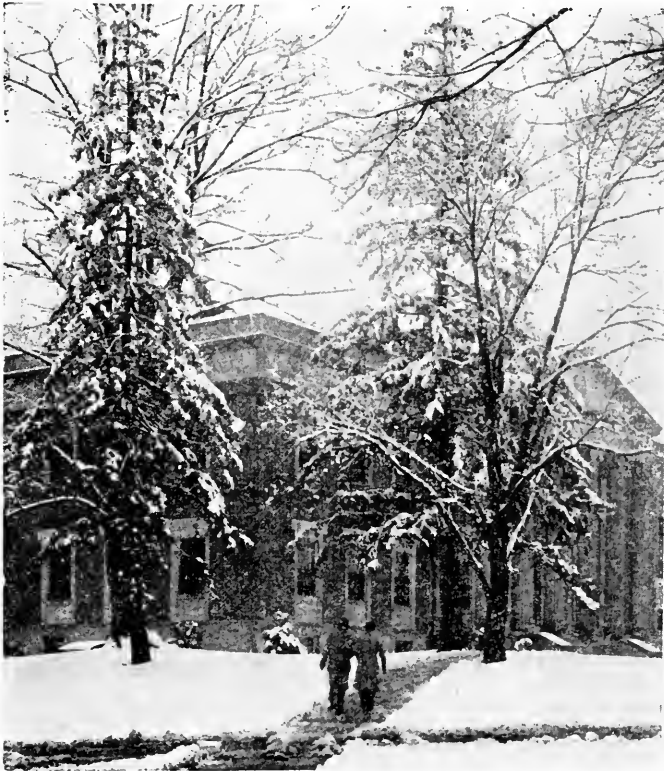
O. T. 114. Secretarial Office Practice (3)—First and second semesters. week. Prerequisite, junior standing. Laboratory fee, \$7.50.

The development of the principles, procedures, and systems of filing with the use of laboratory sets. Particular emphasis will be placed on how each system may be used.

O. T. 114. Secretarial Office Practice (3)—First and second semesters. Six times per week. Prerequisite, senior standing and completion of O. T. 110.

The purpose of this course is to give laboratory and office experience to senior secretarial students. A minimum of 90 hours of office experience under supervision is required. In addition each student will prepare a written report on an original problem previously approved.

The Library, College Park



College of
EDUCATION

STAFF

Harold Benjamin, Ph.D., Dean

- ARTHUR AHALT, M.S., Professor and Head, Agricultural Education.
RUTH ALEXANDER, M.A., Assistant Professor of Physical Education.
HAROLD BENJAMIN, Ph.D., Professor of Education and Dean.
HENRY BRECHBILL, Ph.D., Professor of Education and Assistant Dean.
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ROSEMARY FLANNERY, B.S., Instructor in Nursery School-Kindergarten Education.
ELIZABETH FLINCHBAUGH, A.M., Instructor in Physical Education.
MARY A. FRENCH, M.S., Instructor in Music and Music Education.
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GEORGE M. GLOSS, Ed.D., Professor of Physical Education.
R. LEE HORNBAKE, Ph.D., Professor of Industrial Education.
LOUIS E. HUTTO, Ph.D., Professor of Physical Education.
JAMES KEHOE, B.S., Assistant Professor of Physical Education.
WILLIAM E. KROUSE, JR., B.S., Instructor in Physical Education.
HARRY B. MCCARTHY, D.D.S., M.A., Director of Clinics, School of Dentistry.
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DONALD MALEY, A.M., Instructor in Industrial Education.
MADELAINÉ MERSHON, A.M., Assistant Professor of Education.
VIOLA MITCHELL, M.A., Assistant Professor of Physical Education.
HUGH G. MORGAN, Ph.D., Associate Professor of Education.
RAYMOND MORGAN, Ph.D., Professor of Physics.
CLARENCE A. NEWELL, Ph.D., Professor of Educational Administration.
DORIS M. NEYENDORF, B.S., Instructor in Physical Education.
LAURENCE E. OLEWINE, M.Ed., Instructor in Industrial Education.
ARTHUR S. PATRICK, A.M., Associate Professor of Business Education.

HUGH PERKINS, A.M., Assistant Professor of Child Study.

DANIEL A. PRESCOTT, Ph.D., Professor of Education and Director, Institute for Child Study.

ADELAIDE R. ROSS, M.S., Assistant Professor of Physical Education.

ALVIN W. SCHINDLER, Ph.D., Professor of Education.

HENRY J. SCHROEDER, M.S., Executive Secretary, United Nations Information Center.

H. BURTON SHIPLEY, B.S., Associate Professor of Physical Education.

FRANK L. SIEVERS, A.M., Associate Professor of Education.

DENZEL D. SMITH, Ph.D., Associate Professor of Psychology.

CATHERINE SNELL, Ph.D., Assistant Professor of Physical Education.

THERON A. TOMPKINS, A.M., Associate Professor of Physical Education.

JAMES VANZWOLL, Ph.D., Professor of School Administration.

GUSTAVE G. WALL, A.M., Associate Professor of Industrial Education.

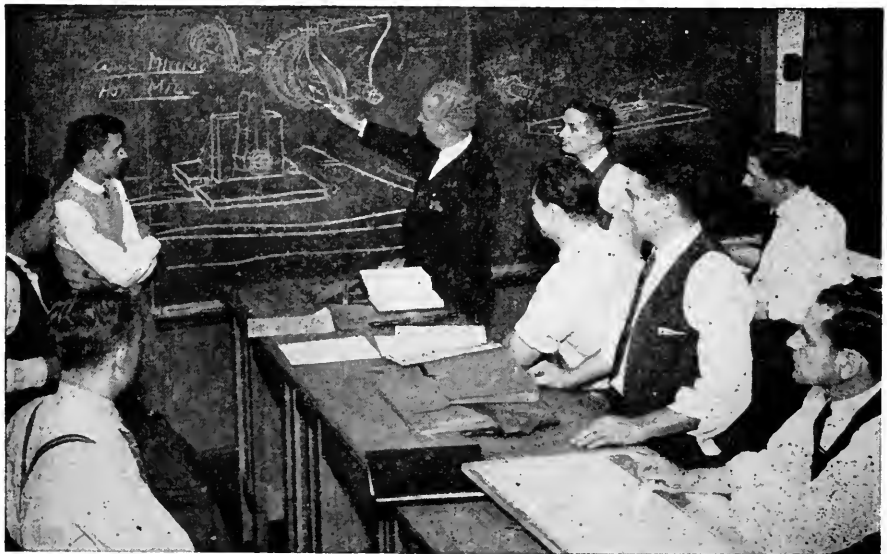
ELIZABETH WHITNEY, A.B., Instructor in Nursery School-Kindergarten Education.

GLADYS A. WIGGIN, Ph.D., Associate Professor of Education.

ALBERT W. WOODS, B.S., Associate Professor of Physical Education.

ALFRED J. WYRE, Assistant Professor of Physical Education.

YVONNE R. ZENN, A.M., Assistant Professor of Physical Education.



Baltimore Education Center
College of Education, University of Maryland

COLLEGE OF EDUCATIONHAROLD BENJAMIN, Ph.D., *Dean*HENRY BRECHBILL, Ph.D., *Assistant Dean*

The College of Education meets the needs of the following classes of students: (1) undergraduates preparing to teach in secondary, nursery, kindergarten, nursing, and dental schools; (2) present or prospective elementary teachers who wish to supplement their training; (3) students preparing for educational work in the trades and industries; (4) students preparing to become home demonstrators, club or community recreation leaders, and (in cooperation with the Department of Sociology) social workers; (5) graduate students preparing for teaching, supervisory, or administrative positions; (6) students whose major interests are in other fields, but who desire courses in education.

SPECIAL FACILITIES AND ACTIVITIES**Research and Teaching Facilities**

Because of the location of the University in the suburbs of the nation's capital, unusual facilities for the study of education are available to its students and faculty. The Library of Congress, the library of the U. S. Office of Education, and special libraries of other government agencies are accessible, as well as the information services of the National Education Association, American Council on Education, U. S. Office of Education, and other institutions, public and private. The school systems of the District of Columbia, Baltimore, and the counties of Maryland offer generous cooperation.

The Institute for Child Study

The Institute for Child Study carries on the following activities: (1) it undertakes basic research in human development; (2) it digests and synthesizes research findings from the many sciences that study human beings; (3) it plans, organizes, and services programs of direct child study by in-service teachers in individual schools or in municipal, county, or state systems; (4) it offers field training to a limited number of properly qualified doctorate students, preparing them to render expert consultant service to schools and for college teaching of human development. Inquiries should be addressed to Director, Institute for Child Study.

The Workshop on Child Development and Education

The College of Education operates a Workshop on Child Development and Education for six weeks each summer. Requiring full-time work of all participants, it provides opportunities for (1) study and synthesis of scientific knowledge about children and youth; (2) training in the analysis of case records; (3) training for study-group leaders for in-service child study programs; (4) planning in-service programs of child study for teachers and pre-service courses and laboratory experiences for

prospective teachers; (5) analysis of the curricular, guidance, and school organization implications of scientific knowledge about human development and behavior. Special announcements of the Workshop are available about March 15 of each year and advance registration is required because the number of participants must be limited. Inquiries should be addressed to the Director, Workshop on Child Development and Education.

The University of Maryland Nursery-Kindergarten School

The University of Maryland has a nursery-kindergarten school on the campus in which students majoring in nursery-kindergarten school education may receive training and practical experience. This school is a co-operative effort which is operated jointly by the parents and the College of Education.

Professional and Pre-professional Organizations

The College of Education sponsors two professional organizations: Phi Delta Kappa, the national professional fraternity for men in Education, and Iota Lambda Sigma, the national honorary fraternity in Industrial Education. Both fraternities have large and active chapters and are providing outstanding professional leadership in their fields of service.

The College of Education also sponsors the Harold Benjamin Chapter of the Future Teachers of America, a department of the National Education Association. This chapter is open to undergraduate students on the College Park campus.

Educational Policies Commission

The College of Education has a students' Educational Policies Commission of eleven members. This Commission, with two representatives from each of the undergraduate classes, two graduate representatives, and a student chairman, recommends changes in the general policies of the College of Education to the faculty.

United Nations Information Center

With a view to helping teachers of Maryland to obtain information about the United Nations quickly and easily, the College of Education has accepted the invitation of the United Nations to operate a correspondence center for the State of Maryland. This center receives materials from United Nations Headquarters at Lake Success. Packets of these materials are sent to teachers on request, post paid. For further information teachers should write to the Executive Secretary, United Nations Information Center, College of Education, University of Maryland.

Courses Outside of College Park

Through the College of Special and Continuation Studies a number of courses in education are offered in Baltimore and elsewhere. These courses are chosen to meet the needs of groups of students in various centers.

In these centers, on a part-time basis, a student may complete a part of the work required for a bachelor's degree. Graduate courses in education are offered in Baltimore.

Announcements of such courses may be obtained by addressing requests to the Director, College of Special and Continuation Studies, College Park, Maryland.

UNDERGRADUATE PROGRAMS

Requirements for Admission

The requirements for admission to the College of Education are in general the same as for the other colleges of the University. Candidates for admission whose high school records are consistently low are strongly advised not to seek admission to the College of Education.

Guidance in Registration

At the time of matriculation each student is tentatively assigned to a member of the faculty who acts as the student's personal adviser. The choice of subject areas within which the student will prepare to teach will be made under faculty guidance during the first year in the Introduction to Education course required of all freshmen. Thereafter, the student will advise regularly with the faculty member responsible for his teaching major. While in particularly fortunate cases it may be possible to make satisfactory adjustments as late as the junior year for students from other colleges who have not already entered upon the sequence of professional courses, it is highly desirable that the student begin his professional work in the freshman year. *Students who intend to teach* (except Vocational Agriculture) *should register in the College of Education*, in order that they may have continuously the counsel and guidance of the faculty which is directly responsible for their professional preparation.

Junior Status

The first two years of college work are preparatory to the professional work of the junior and senior years. To be eligible to enter the professional courses, a student must have attained junior status. (See Academic Regulations.)

Certification of Teachers

The State Department of Education certifies to teach in the approved high schools of the State only graduates of approved colleges who have satisfactorily fulfilled subject-matter and professional requirements. Specifically it limits certification to graduates who "rank academically in the upper four-fifths of the class and who make a grade of C or better in practice teaching." The several high school curricula of the College of Education fulfill State Department requirements for certification. (See also Elementary Education.)

From the offerings in education, the District of Columbia requirement of 24 semester hours of professional courses may be fully met. Students intending to qualify as teachers in Baltimore, Washington, or any other city or state should, in their junior year, obtain a statement of certification requirements in such area and be guided thereby in the selection of courses. Advisers will assist in obtaining and utilizing such information.

Degrees

The degrees conferred upon students who have met the conditions prescribed for a degree in the College of Education are Bachelor of Arts and Bachelor of Science. Majors in English, social sciences, and language receive the B.A. degree. Mathematics and art majors may receive either degree. All others receive the B.S. degree.

GRADUATE STUDIES

Graduate Status

For graduate study in education a student must have earned at least 16 semester credits in education at the undergraduate level, and hold a bachelor's or master's degree from a college or university of recognized standing. He must also satisfy the graduate Dean as to his ability to do graduate work.

Registration

A graduate student in education must matriculate in the Graduate School. Application for admission to the Graduate School should be made prior to dates of registration on blanks obtained from the office of the Dean of the Graduate School. For further instructions a student should consult the Graduate School catalog.

Master's Degrees

A graduate student in education may matriculate for a Master of Education or a Master of Arts degree. For requirements for these degrees, the student should consult both the Graduate School catalog and the duplicated material issued by the education faculty. On matriculation, the student should select a faculty adviser of professorial rank.

Doctor's Degrees

Programs leading to a Doctor of Philosophy or a Doctor of Education degree in education are administered for the Graduate School by the department of education. For requirements of these degrees, the student should consult both the Graduate School catalog and the statement of policy relative to doctoral programs in education. If the student has not already made arrangements with a member of the faculty to advise him, he should consult with the chairman of the education Committee on Candidacy regarding a proper adviser.

CURRICULA AND REQUIRED COURSES

The undergraduate curricula in the College of Education with advisers of each curriculum are as follows:

Academic Education

English—Marie D. Bryan, Room T-111

Foreign Languages—Marie D. Bryan

Mathematics—Henry Brechbill, Room T-114

Natural Sciences—Henry Brechbill

Social Sciences—Alvin W. Schindler, Room T-117

Speech—Ray Ehrensberger, Room R-106

Agricultural Education (under the College of Agriculture)

Arthur M. Ahalt, Room O-137

Art Education

Vienna Curtiss, Room H-103

Business Education

Arthur S. Patrick, Room Q-245

Dental Education

Harry B. McCarthy (School of Dentistry, Baltimore)

Elementary Education

Alvin W. Schindler, Room T-117

Health Education

Louis R. Burnett, Room G-102

Home Economics Education

Industrial Education

Glen D. Brown (Baltimore)

R. Lee Hornbake, Room T-110

Music Education

Mary A. French, Music Building

Nursery School-Kindergarten Education

Edna B. McNaughton, Room T-107

Nursing Education

Florence M. Gipe (Baltimore)

Physical Education (Men)

Louis R. Burnett, Room G-102

Louis E. Hutto, Room G-102

Albert W. Woods, Armory

Physical Education (Women)

Dorothy F. Deach, Women's Field House

Recreation Education

Louis R. Burnett, Room G-102

A total of 120 semester hours in addition to the University requirement in military science and physical education is required for graduation in the College of Education. In no case shall the total number of semester hours required for graduation be less than 128.

The following minimum requirements are common to all curricula: English—12 semester hours; social studies—12 semester hours, as follows: Soc. 1—Sociology of American Life; G & P 1—American Government; and H. 5, 6—History of American Civilization; science or mathematics—6 semester hours; education—20 semester hours; speech—3 semester hours; physical education and military science as required by the University.

Marks in all upper division courses in education and in subjects in major and minor fields must be C or higher. A general average of C or higher must be maintained and three-fourths or more of the total required credits must carry grades C or better. In order to be admitted to a course in student teaching *a student must have a grade point average of 2.275.*

Exceptions to curricular requirements and rules of the College of Education must be recommended by the student's adviser and approved by the Dean.

Students who are not enrolled in the College of Education but who are preparing to teach must meet all curricular and scholastic requirements of the College of Education.

Majors and Minors.

Students select a teaching major: for example, social science, art, music, physical education. Those electing the academic curriculum will ordinarily select both a teaching major and a teaching minor, and students in other curricula may select minors if they so desire. Minors may be chosen in fields other than those listed in this catalog: for instance, psychology or human growth and development. Courses in the minor field should be selected with the advice of the student's major adviser and the department concerned.

Students selecting an academic major and an academic minor, or those selecting *one* special teaching field such as industrial education need to take only one methods course: for example, Ed. 140 or Ind. Ed. 140. Students who select an academic major and a special fields minor, or vice versa, must take methods courses in both the major and minor fields, and should divide their practice teaching between the two fields.

Academic Education

Students enrolled in this curriculum will meet the above minimum requirements in English and social science, plus the following:

- (1) Foreign language for candidates for the bachelor of arts degree: 12 semester hours provided the student enters with less than three years of foreign language credits; 6 semester hours, if he enters with three years of such credits. No foreign language is required of any student who enters with four years of language credits nor of candidates for the bachelor of science degree. (See "Degrees" above.)
- (2) Science or mathematics, 12 semester hours.
- (3) Education, 21 semester hours.
- (4) Speech, 4 semester hours.

All students who elect the academic education curriculum will fulfill the preceding *general* requirements and also prepare to teach one or more school subjects which will involve meeting *specific* requirements in *particular* subject matter fields.

The *specific* requirements by subject fields are as follows:

English. A major in English requires 36 semester hours as follows:

Composition and Literature	12 semester hours
American Literature, Advanced.....	3 semester hours
Electives	21 semester hours

A minor in English requires 26 semester hours. It includes the 15 semester hours prescribed for the major and 11 hours of electives.

Electives must be chosen with the approval of the adviser who will guide the student in terms of College of Education records and recommendations of the English Department.

Social Sciences. For a major in this group 36 semester hours are required, of which at least 18 hours must be in history, including 6 hours in American history and 6 hours in European history. Six of the 18 hours must be in advanced courses. For a minor in the group, 24 hours are required, of which 18 are the same as specified above.

History (including one year each of American and European History)	18 semester hours
Economics, sociology, government, consumer education, or geography	6 semester hours
Electives	12 semester hours

For a minor, the requirements are the same less the electives.

Foreign Languages. All students preparing to teach French, German, or Spanish are required to take Comparative Literature 101 and 102 and are strongly advised to take the review course for majors. Further courses in comparative literature along with work in European or Latin American history are also recommended.

Specific minimum requirements in the three languages are a semester each of intermediate and advanced conversation (Fr., Ger., or Sp. 8 and 80), a semester of grammar review, six hours of introductory survey of the literature (Fr., Ger., Sp. 75 and 76), one semester of a Life and Culture Course (Fr., Ger., or Sp. 161 or 162) and six hours in literature courses numbered 100 or above. No minor is provided.

Mathematics. A major in mathematics requires 36 semester hours as follows: Math. 2, 14, 15, 17, 20, 21, and elective credits in mathematics.

For a minor, the requirements are: Math. 2, 14, 15, 17, 20, 21, and five elective credits in mathematics.

The following courses are recommended for electives in mathematics: Math. 13, 16, 102, 103, 124, 125.

Students who pass an attainment examination with a satisfactory grade are excused from the requirement in Solid Geometry.

Science. In general science a major of 40 semester hours and a minor of 30 semester hours are offered, each including elementary courses in chemistry, physics, and biology (zoology and botany).

Other courses will be chosen subject to the approval of the student's major adviser and of the science department in which his interest lies.

Minors of 20 semester hours are offered in chemistry, in physics, and in biological sciences. A minor in biology must be supported by a course in chemistry. A minor in physics must be supported by a basic course in chemistry. A minor in chemistry must be supported by a basic course in physics.

If a major in general science is accompanied by a minor in chemistry, physics, or biology, the same credits may be applied to both provided that they number not less than 52 semester hours in natural sciences.

Speech. A minor of 22 semester hours is offered in Speech. The minimum requirements for this minor are 12 semester hours in addition to the 10 semester hours of departmental requirements in Speech 1, 2, 3, and 4. The 12 semester hours above the departmental requirement must include 6 hours of courses numbered 100 or higher. It is the policy of the department to build a program of study in anticipation of the needs of prospective teachers, supervisors, correctionists, dramatic coaches, and other specialists in the general field of speech. All programs for the minor must be approved by the departmental adviser.

Academic Education Curriculum

Freshman Year

	—Semester—	
	I	II
*Ed. 2—Introduction to Education.....	2	....
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
Speech 1, 2—Public Speaking.....	2	2
G. & P. 1—American Government.....	....	3
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Hea, 2, 4—Hygiene I, II (Women).....	2	2
Major and Minor Requirements.....	4	6
	-----	-----
Total	16-18	16-18

Sophomore Year

Eng. 3, 4—Composition and World Literature, or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Major and Minor Requirements.....	5	5
	-----	-----
Total	15-18	15-18

Junior Year

Ed. 140—Curriculum, Instruction, and Observation.....	....	3
Major and Minor Requirements, Electives.....	16	13
	-----	-----
Total	16	16

Senior Year

*Psych. 10—Educational Psychology	3	}
*Ed. 160—Educational Sociology	2	
*Ed. 150—Educational Measurement	2	
*Ed. 149—Methods and Practice of Teaching.....	9	
*Major and Minor Requirements, Electives.....	....	16
	-----	-----
Total	16	16

Agricultural Education

This curriculum is designed to prepare students for teaching vocational agriculture in high schools. To obtain full particulars on course requirements, the student should consult the bulletin of the College of Agriculture.

Art Education

This curriculum is planned to meet the growing demand for special teachers and supervisors in art activity. Emphasis is placed upon ways to draw out and develop the creative inclinations of beginners; to integrate art and other areas of study; to utilize art in solving social problems. General requirements are the same as for the academic curriculum.

* May be taken either semester.

Art Education Curriculum

	Semester	
	I	II
<i>Freshman Year</i>		
Ed. 2—Introduction to Education.....	2	....
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	....	3
G. & P. 1—American Government.....	3	....
Speech 1, 2—Public Speaking	2	2
Pr. Art 1—Design .....	....	3
Pr. Art 2—Survey of Art History.....	2	....
Hea. 2, 4—Hygiene (Women).....	2	2
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
*Math. O—Basic Mathematics .....	....	0
Electives	1	2
Total	16-18	16-18
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and World Literature, or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
Chem. 11, 13—General Chemistry	3	3
Pr. Art 20—Costume Design	3	....
Pr. Art 30—Typography and Lettering.....	....	3
Cr. 2—Simple Crafts .....	....	2
Pr. Art 3—Creative Art Inspired by Primitive Art.....	2	....
Pr. Art 4—Three-dimensional Design .....	....	2
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Electives and General Requirements.....	....	....
Total	15-18	17-20
<i>Junior Year</i>		
Cr. 198—Crafts in Therapy.....	....	2
H. 5, 6—American History	3	3
Pr. Art. 140, 141—Interior Design.....	3	3
Cr. 20—Ceramics	2	....
Cr. 30—Metalry	2	....
Cr. 5—Puppetry .....	....	2
Professional Lectures .....	....	0
Electives and General Requirements.....	6	6
Total	16	16
<i>Senior Year</i>		
Ed. 140—Curriculum, Instruction, and Observation—Art.....	3	....
Pr. Art 132—Advertising Layout	2	....
Cr. 40—Weaving	2	....
Psych. 110—Educational Psychology .....	....	3
Ed. 160—Educational Sociology .....	....	2
Ed. 150—Educational Measurements .....	....	2
Ed. 149—Methods and Practice of Teaching.....	....	9
Electives and General Requirements.....	9	....
Total	16	16

* An examination in mathematics will be given to freshmen during the fall semester; those who pass will not be required to take Math. O

Business Education

Two curricula are offered for the preparation of teachers of business subjects. The General Business Education Curriculum qualifies for teaching all business subjects except shorthand. Providing thorough training in general business, including economics, it leads to teaching positions on both junior and senior high school levels. By the proper selection of electives, persons following this curriculum may also qualify as teachers of social studies.

The Secretarial Education course is adapted to the needs of those who wish to become teachers of shorthand as well as other business subjects.

General Business Education Curriculum

—Semester—

Freshman Year

	I	II
Eng. 1, 2—Composition and American Literature.....	3	3
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
Math. 5—General Mathematics	3	....
Math. 6—Mathematics of Finance.....	....	3
Econ. 1, 2—Economic Resources	2	2
S. T. 1—Principles of Typewriting.....	....	2
Ed. 2—Introduction to Education.....	2	....
Speech 1, 2—Public Speaking	2	2
M. S. 1, 2—Basic R. O. T. C. (Men).....	3	3
Hea. 2, 4—Hygiene I, II (Women).....	2	2
Physical Activities (Men and Women).....	1	1
Total	18-19	18-19

Sophomore Year

Eng. 3, 4—Composition and World Literature.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
Econ. 31, 32—Principles of Economics.....	3	3
B. A. 20, 21—Principles of Accounting.....	4	4
S. T. 2—Intermediate Typewriting.....	2	....
S. T. 10—Office Typewriting Problems.....	....	2
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities (Men and Women).....	1	1
Total	16-19	16-19

Junior Year

B. A. 180, 181—Business Law	4	4
Ed. 140—Curriculum, Instruction, and Observation—Business Subjects .....	....	3
B. Ed. 100—Techniques of Teaching Office Skills.....	2	....
S. T. 112—Filing .....	....	2
S. T. 111—Office Machines.....	3	....
B. A. 10, 11—Organization and Control.....	2	2
Econ. 140—Money and Banking.....	3	....
Econ. 150—Marketing and Organization.....	....	3
Electives	6	6
Total	16	16

	Semester	
	I	II
<i>Senior Year</i>		
Psych. 110—Educational Psychology .....	....	} 3 2 2 9
Ed. 150—Educational Measurements .....	....
Ed. 160—Educational Sociology .....	....
Ed. 149—Methods and Practice of Teaching.....	....
B. A. 165—Office Management	3	....
Electives and Requirements.....	13	....
Total	16	16

Secretarial Education Curriculum

Freshman Year

Same as General Business Curriculum

Sophomore Year

Eng. 3, 4—Composition and World Literature, or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
S. T. 12, 13—Principles of Shorthand I, II.....	4	4
S. T. 2—Intermediate Typewriting	2	....
S. T. 10—Office Typewriting Problems.....	....	2
Econ. 37—Fundamentals of Economics.....	3	....
M. S. 3, 4—Basic R. O. T. C. (Men).....	3	3
Physical Activities	1	1
Electives .....	....	3
Total	16-19	16-19

Junior Year

B. A. 180, 181—Business Law	4	4
Ed. 140—Curriculum, Instruction, and Observation—Business Subjects .....	....	3
B. Ed. 100—Techniques of Teaching Office Skills.....	2	....
S. T. 16—Advanced Shorthand	3	....
S. T. 17—Transcription	2	....
B. A. 20, 21—Principles of Accounting.....	4	4
S. T. 112—Filing .....	....	2
S. T. 111—Office Machines	3	....
Electives .....	....	3
Total	18	16

Senior Year

S. T. 110—Secretarial Work	3	....
B. A. 165—Office Management	3	....
Psych. 110—Educational Psychology .....	....	} 3 2 2 9
Ed. 150—Educational Measurements .....	....
Ed. 160—Educational Sociology .....	....
Ed. 149—Methods and Practice of Teaching.....	....
Electives and Requirements.....	10	....
Total	16	16

Dental Education

In cooperation with the School of Dentistry, the College of Education offers a curriculum in dental education leading to the Bachelor of Science degree, with course work offered in the Baltimore Center only. This curriculum is designed to prepare superior graduates of the Dental School for positions as teachers of dentistry. Details of the program may be obtained from the Dean of the School of Dentistry or of the College of Education. Persons entering the program must be approved by the Committee on Admissions of the Dental School.

Dental Education Curriculum

For students who are dental school graduates with the degree of Doctor of Dental Surgery (acquired since 1936-37, after six years of study) and who have the approval of the Committee on Admissions of the Dental School:

Ninety-six (96) semester hours (or the equivalent of three years of work) may be credited for the dental school work provided none of the dental school marks were lower than "B".

The additional 32 semester hours, as follows, are required:

Academic subjects	12
Education	20
History of Dental Education.....	2
Educational Psychology	4
Educational Measurement	2
Methods of Teaching Vocational Subjects.....	2
Organization and Management of Vocational Classes..	2
Electives	8

Elementary Education

This curriculum is open only to persons who have completed a two- or three-year curriculum in a Maryland State Teachers College or other accredited teacher education institutions and whose records give evidence of ability and character essential to elementary teaching. Such persons will be admitted to advanced standing and classified provisionally in appropriate classes.

Credit for extension courses given by other institutions may be accepted in an amount not exceeding 30 semester hours. The last 30 semester hours of work preceding the conferring of the degree must be taken in the University of Maryland.

State Department of Education requirements provide that a teacher in service may present for certificate credit not more than six semester hours of credit completed during a school year. The College of Education assumes no responsibility in this connection but candidates are advised to observe this regulation.

Elementary Education Curriculum

For graduates of two year normal schools.

Credits

Credit for normal school work, not more than..... 64

Requirements

Education 4

English (not including freshman and sophomore English)..... 10

*Natural science (chemistry, physics, botany, zoology,
bacteriology, entomology, general science) 10Social science (history, government, sociology,
economics, geography) 12

†Electives 28

For graduates of three year normal schools.

Credit for normal school work, not more than..... 96

Requirements

Education 2

English (not including freshman and sophomore English)..... 6

*Natural science (as above) 6

Social science (as above) 12

†Electives 6

Home Economics Education

The Home Economics Education curriculum is designed for students who are preparing to teach vocational or general home economics or to engage in any phase of home economics work which requires a knowledge of teaching methods. It includes studies of all phases of home economics and the allied sciences, with professional training for teaching these subjects. A student majoring in this curriculum may also qualify for a science minor.

* Not more than four semester hours of general science will be counted toward meeting the natural science requirement.

† If a student is not allowed full credit for normal school work by the Director of Admissions, he must take additional electives to the amount needed to complete 128 semester hours of work.

Home Economics Education Curriculum

<i>Freshman Year</i>	Semester	
	I	II
Ed. 2—Introduction to Education.....	2	....
Eng. 1, 2—Composition and American Literature, or.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Speech 1, 2—Public Speaking.....	2	2
H. E. 1—Home Economics Lectures.....	1	....
Pr. Art 1—Design.....	3	....
*Math. O .....	....	0
Hea. 2, 4—Hygiene I, II.....	2	2
Physical Activities	1	1
Tex. 1—Textiles .....	....	3
Electives .....	....	3
Total	17	17

Sophomore Year

En. 3, 4—Composition and World Literature, or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 11, 13—General Chemistry.....	3	3
Pr. Art 20—Costume Design.....	....	3
Clo. 20A or B—Clothing.....	3	....
Foods 2, 3—Foods.....	....	3
Physical Activities	1	1
Electives	3	....
Total	16	16

Junior Year

H. E. Ed. 140—Curriculum, Instruction, and Observation.....	....	3
Psych. 110—Educational Psychology	3	....
Home Mgt. 150, 151—Home Management.....	3	3
Nut. 10—Elements of Nutrition.....	....	3
Foods 100—Food Economics	2	....
Foods 101—Meal Service.....	....	2
Clo. 120—Draping .....	....	3
Pr. Art 140—Interior Design.....	3	....
Econ. 37—Fundamentals of Economics.....	3	....
Zool. 16—Human Physiology.....	4	....
Bot. 1—General Botany.....	....	4
Total	18	18

* Not required of students who pass the qualifying examination which is given during the first semester. Prerequisite for chemistry.

<i>Senior Year</i>	Semester	
	I	II
H. E. Ed. 102—Problems in Teaching Home Economics.....	3	....
Home Mgt. 152—Practice in Management of the Home.....	....	3
H. E. Ed. 149—Methods and Practice of Teaching Vocational Home Economics .....	....	9
C. Ed. 110—Child Development, IV.....	3	....
Ed. 150—Educational Measurement .....	....	2
Bact. 51—Household Bacteriology	3	....
Ed. 160—Educational Sociology .....	....	2
Electives	7	....
Total	16	16

Industrial Education

The program of studies in Industrial Education provides: (a) a four-year curriculum leading to the degree of bachelor of science in industrial education; (b) a program of professional courses to prepare teachers to meet the certification requirements in vocational and occupational schools; (c) a program of courses for the improvement of teachers in service.

Experience in some trade or industrial activity will benefit students preparing to teach industrial subjects. The curriculum is designed to prepare teachers of trade and industrial shop and related subjects, and teachers of industrial arts. Reasonable adaptations of this curriculum are made for trade and industrial teachers in service. Students entering an industrial education curriculum register in the College of Education.

Industrial Education Curriculum

Freshman Year

Ed. 2—Introduction to Education.....	2	....
Eng. 1, 2—Composition and American Literature.....	3	3
Speech 1, 2—Public Speaking.....	2	2
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government .....	....	3
Ind. Ed. 1—Mechanical Drawing	2	....
Ind. Ed. 21—Mechanical Drawing .....	....	2
Ind. Ed. 2—Elementary Woodworking	2	....
Ind. Ed. 22—Machine Woodworking I.....	....	2
Ind. Ed. 12—Shop Calculation .....	....	3
M. S. 1, 2—Basic R. O. T. C.....	3	3
Physical Activities	1	1
Total	18	19

<i>Sophomore Year</i>	—Semester—	
	I	II
Eng. 3, 4—Composition and World Literature, or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
Ind. Ed. 23—Arc and Gas Welding.....	1	....
Ind. Ed. 24—Sheet Metal Work.....	2	....
Ind. Ed. 41—Architectural Drawing	2	....
Ind. Ed. 67—Cold Metal Work .....	....	2
Chem. 1, 3—General Chemistry	4	4
Math. 10—Algebra .....	....	3
M. S. 3, 4—Basic R. O. T. C.....	3	3
Physical Activities	1	1
Total	19	19
 <i>Junior Year</i>	 I	 II
Ind. Ed. 26—Art Metal Work I.....	....	2
Ind. Ed. 28—Electricity I.....	....	2
Ind. Ed. 69—Machine Shop Practice I.....	2	....
Ind. Ed. 110—Foundry	1	....
Ind. Ed. 160—Essentials of Design.....	2	....
Ind. Ed. 140—Curriculum, Instruction, and Observation—Industrial Education .....	....	3
Ind. Ed. 166—Educational Foundations of Industrial Arts, or.....	2	....
Ind. Ed. 171—History of Vocational Education.....	2	....
Ind. Ed. 48—Electricity II .....	....	2
Phys, 1, 2—Elements of Physics.....	3	3
Ind. Ed. 164—Shop Organization and Management.....	....	2
Electives	4	2
Total	16	16
 <i>*Senior Year</i>		
Psych. 110—Educational Psychology .....	....	3
Ed. 160—Educational Sociology .....	....	2
Ind. Ed. 89—Machine Shop Practice II.....	2	....
Ind. Ed. 31—Mechanical Drawing	2	....
**Ind. Ed. 42—Machine Woodworking II.....	2	....
Ed. 150—Educational Measurement .....	....	2
Ed. 161—Guidance in Secondary Schools.....	2	....
Ind. Ed. 105—General Shop, or.....	2	....
Ind. Ed. 168—Trade or Occupational Analysis.....	2	....
Econ. 37—Fundamentals of Economics.....	3	....
Ind. Ed. 149—Methods and Practice of Teaching.....	....	9
Electives	1	....
Total	16	16

* Subjects in the senior year will be so arranged that the two semesters may be interchanged.

** Automotives accepted as a substitute.

Music Education

The Music Education curriculum affords pre-service preparation in the specialized field of Music Education and leads to the degree of Bachelor of Science in Education with a Public School Music major. The curriculum provides training in both the choral and instrumental fields of music and is planned to meet the growing demand for special teachers and supervisors in Public School Music. By proper selection of subjects, persons may also qualify in other academic subjects. General requirements are the same as for the academic curriculum.

A major in music education includes 33 semester hours of music and 20 semester hours of applied music. A minor in the field may be secured with 23 hours of music and 10 hours of applied music. A curriculum for a major in music education will be found below. A minor in the field must include Mus. 2, 3, 7, 8, 11, 50, 70, 71, 80, 81, 120, and applied music as needed; Ed. 140 in music, and practice teaching which is divided between the student's major and minor fields.

Music Education Curriculum

	—Semester—	
	I	II
<i>Freshman Year</i>		
Ed. 2—Introduction to Education.....	2	....
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	....	3
G. & P. 1—American Government.....	3	....
Speech 1, 2—Public Speaking.....	2	2
Mus. 2, 3—History of Music.....	1	1
Mus. 7—Fundamentals of Music.....	....	2
M. S. 1, 2—Basic R. O. T. C. or R. O. T. C. Band (Men).....	3	3
Physical Activities	1	1
Hea. 2, 4—Hygiene I, II (Women).....	2	2
Applied Music as needed—Mus. 12, 13, 14, 4, 5, 6 and 10 (one credit will be given for each).....	2	2
Total	16-17	16-17
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and World Literature. or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Mus. 70, 71—Harmony I, II.....	3	3
Mus. 8, 11—Solfeggio and Ear Training I, II.....	2	2
*Mus. 80—Instruments of the Orchestra (Strings).....	2	....
*Mus. 81—Instruments of the Band (Winds and Percussion).....	....	2
*Mus. 1—Music Appreciation (Elective).....	3	....
M. S. 3, 4—Basic R. O. T. C. or R. O. T. C. Band (Men).....	3	3
Physical Activities	1	1
Applied Music as needed—Mus. 52, 53, 54, 4, 5, 6 and 10 (one credit will be given for each).....	....	2
Total	17-20	16-19

* May be taken either semester.

<i>Junior Year</i>	(Semester)	
	I	II
Ed. 104—Curriculum, Instruction, and Observation—Music.....	....	3
Mus. 50—Elementary Conducting	2	....
*Mus. 120—Advanced History and Appreciation of Music.....	3	....
Mus. 150, 151—Harmony III, IV.....	3	3
Mus. 160—Advanced Choral Conducting, Materials and Methods.....	....	2
Mus. 161—Advanced Orchestral Conducting, Materials and Methods...	....	2
Applied Music as needed—Mus. 112, 113, 114, 4, 5, 6 and 10 (one credit will be given for each), Electives.....	8	6
Total	16	16

Senior Year

*Ed. Psych. 110—Educational Psychology	3	}	....
*Ed. 150—Educational Measurement	2	{	....
*Ed. 160—Educational Sociology	2	}	....
*Ed. 149—Methods and Practice of Teaching.....	9	}	....
*Applied Music as needed—Mus. 152, 153, 154, 4, 5, 6 and 10 (one credit will be given for each), and electives.....	....	16	16
Total	16	16	16

Nursery School—Kindergarten Education

The nursery school-kindergarten curriculum has as its goal the preparation of nursery school-kindergarten teachers. It is also planned to further the personal development of the student and to give training in home-making.

Observation and student teaching are done in the University Nursery School and Kindergarten on the campus. Children in the Nursery School are from 2-5 years, and in the Kindergarten, 5-6.

Nursery School—Kindergarten Education Curriculum*Freshman Year*

Ed. 2—Introduction to Education.....	2	....
C. Ed. 2—Orientation, Observation, and Record Taking.....	....	2
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Speech 4—Voice and Diction.....	....	3
Nut. 10—Elements of Nutrition.....	3	....
Hea. 2, 4—Hygiene I, II.....	2	2
Physical Activities	1	1
Electives	2	2
Total	16	16

* May be taken either semester.

	Semester	
	I	II
<i>Sophomore Year</i>		
C. Ed. 50, 51—Observation and Experience in Nursery School and Kindergarten	1	1
Eng. 3, 4—Composition and World Literature, or.....		
Eng. 5, 6—Composition and English Literature.....	3	3
Zool. 16—Human Physiology.....	4	....
Hist. 5, 6—History of American Civilization.....	3	3
Foods 1—Introductory Foods.....	....	3
Physical Activities	1	1
Electives	4	5
Total	16	16
<i>Junior Year</i>		
C. Ed. 100—Child Development I—Infancy.....	3	....
C. Ed. 101—Child Development II—Early Childhood.....	....	3
C. Ed. 140—Curriculum, Instruction, and Observation—Nursery School	3	....
C. Ed. 150—Curriculum, Instruction, and Observation—Kindergarten..	....	3
C. Ed. 115—Children's Activities and Activities Materials.....	....	3
Zool. 55—Development of the Human Body.....	2	....
Psych. 110—Educational Psychology	3	....
Clo. 123—Children's Clothing	2	....
Nut. 111—Child Nutrition .....	....	2
Electives	3	5
Total	16	16
<i>Senior Year</i>		
C. Ed. 148—Teaching Nursery School.....	4-8	....
C. Ed. 158—Teaching Kindergarten .....	....	4-8
Home Mgt. 150—Home Management	3	....
C. Ed. 145—Guidance in Behavior Problems.....	2	....
C. Ed. 102—Child Development III—The Child From 5 to 10.....	....	2
Electives	3	6

Nursing Education

By cooperative arrangements between the School of Nursing and the College of Education, a curriculum is provided for persons who desire to become teachers in schools of nursing. The total number of credits required for graduation in this curriculum is 128, of which the last 30 hours of work must be taken in the University of Maryland. Students eligible for this curriculum must have completed a three-year course in nurses' training, successfully passed the Maryland State Board examination, and qualified as registered nurses.

Nursing Education Curriculum	<i>Credits</i>
Credit for nurses' training work.....	30 to 42
General Requirements	
English	12
Social science	12
Education	
History of Nursing Education (history of education emphasizing nursing education)	2
Psych. 110—Educational Psychology	3
Ed. 150—Educational Measurement	2
Ed. 140—Curriculum, Instruction, and Observation— Nursing Education	3
Ed. 160—Educational Sociology	2
Ed. 148—Methods and Practice of Teaching— Nursing Education	4
Electives	

These are selected with the assistance of the adviser from the fields of English, social science, science, mathematics, foreign languages, psychology, education, and such special subjects as art, music, health, and physical education. A total of 20 hours may be selected from the fields of education and special subjects.

Physical Education, Health Education, and Recreation

The curricula in Physical Education, Health Education, and Recreation are designed to prepare students for teaching or for work involving educational techniques in these fields.

The Health Education and Physical Education curricula lead primarily to teaching and supervising such work in schools and colleges. The Recreation curriculum may prepare for leadership in a variety of situations such as work in school, community, industry or camping.

All applicants must be free of handicapping physical defects and be approved by the medical director and the director of the major department.

Suitable uniforms, as prescribed by the department, are required for the activity classes and for practice teaching.

Students expecting to be certified as teachers in these areas should register in the College of Education.

Curricula for Physical Education, Health Education and Recreation

The programs for Freshman and Sophomore years are alike in all three curricula, except as follows:

(1) Majors in Health Education may select such physical activities as will meet minimal requirements, allowing additional electives.

(2) Majors in Recreation are not required to register for P.E. 56 and 58.

Any student enrolled in the College of Education may develop a minor in any of the above curricula by consultation with his adviser and approval of the Director of Physical Education. More complete details may be secured from the catalog of the College of Military Science, Physical Education and Recreation.

Odd numbered P.E. courses are for Men; even numbered P.E. courses are for Women; P.E. courses ending in "O" are for both.

Freshman Year (All Curricula)

	Sem. Cr.		Sem. Cr.
Eng. 1—Composition and American Literature	3	Eng. 2—Composition and American Literature	3
Zool. 1—General Zoology	4	G. & P. 1—American Government..	3
Soc. 1—Sociology of American Life..	3	Sp. 10—Group Discussion.....	2
Sp. 4—Voice and Diction.....	3	Ed. 2—Introduction to Education....	2
*P. E. 10—Basic Body Controls.....	1	P. E. 30—Introduction to Physical Education, Health, and Recreation	3
*P. E. 61, 62—Elementary Techniques of Sports and Gymnastics.....	2	P. E. 20—Basic Body Controls.....	1
P. E. 52—Dance Techniques.....	1	P. E. 54—Dance Techniques.....	1
M. S. 1—Basic R. O. T. C.....	3	P. E. 63, 64—Elementary Techniques of Sports and Gymnastics.....	2
—		M. S. 2—Basic R. O. T. C.....	3
Total.....	M 19 W 17	—	
		Total.....	M 19 W 17

—Semester—

	I	II
Eng. 3, 4—Composition and Reading World Literature.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
Zool. 14, 15—Human Anatomy and Physiology.....	4	4
Hea. 40—Personal and Community Hygiene.....	3	....
Hea. 50—First Aid and Safety.....	....	2
P. E. 65, 67—Intermediate Techniques of Sports and Gymnastics.....	2	2
P. E. 66, 68—Sports, Folk Dances and Recreational Activities.....	2	2
P. E. 56, 58—Dance Techniques	1	1
M. S. 3, 4—Basic R. O. T. C.....	3	3
Electives (M) .....	....	2
—		
Total	M 18 W 16	M 19 W 15

* Odd numbered P. E. courses are for men; even numbered P. E. courses for women; P. E. courses ending in zero are for both. M—men; W—women.

Physical Education Curriculum

	—Semester—	
	I	II
<i>Junior Year</i>		
Zool. 53—Physiology of Exercise.....	.....	2
Ed. 147—Audio-Visual Education.....	2	.....
P. E. 100—Kinesiology	3	.....
P. E. 101, 103—Organization and Officiating in Intramurals.....	2	2
Ed. 140—Curriculum, Instruction, and Observation.....	.....	3
P. E. 180—Measurement in Physical Education and Health.....	.....	3
P. E. 170—Principles of Physical Education.....	3	.....
P. E. 113, 115—Methods and Materials for Secondary Schools.....	2	2
P. E. 114, 116—Methods and Materials for Secondary Schools.....	2	2
P. E. 124, 126—Methods and Materials in Team Sports.....	2	2
Electives	4 5	4 5
Total	M 17 W 16	M 17 W 16

Senior Year

Ed. 149—Methods and Practice Teaching (see note below).....	9	.....
Psych. 110—Educational Psychology	3	.....
P. E. 190—Administration and Supervision of Physical Education, Health, and Recreation.....	3	.....
P. E. 140—Therapeutics.....	.....	3
Electives .....	.....	13
Total	15	16

NOTE: When Ed. 149 is taken, Psych. 110 and P. E. 190 must also be scheduled; all other required senior courses must be taken in the other semester.

Health Education Curriculum

Junior Year

Bact. 1—General Bacteriology	4	.....
P. E. 100—Kinesiology	3	.....
P. E. 180—Measurement in Physical Education and Supervision.....	3	.....
Hea. 110—Health Service and Supervision.....	3	.....
Ed. 147—Audio-Visual Education.....	2	.....
Bact. 5—Advanced General Bacteriology.....	.....	4
Ed. 140—Curriculum, Instruction, and Observation.....	.....	3
H. Ec. Ed. 110—Child Development.....	.....	3
Psych. 5—Mental Hygiene .....	.....	3
Hea. 120—Teaching Health .....	.....	2
Electives	1 2	1 2
Total	M 17 W 16	M 17 W 16

Senior Year

Ed. 149—Methods and Practice Teaching (see note below).....	9	.....
Psych. 110—Educational Psychology.....	3	.....
P. E. 190—Administration and Supervision of Physical Education, Health, and Recreation.....	3	.....
P. E. 140—Therapeutics.....	.....	3
Electives .....	.....	13
Total	15	16

NOTE: When Ed. 149 is taken, Psych. 110 and P. E. 190 must also be scheduled; all other required senior courses must be taken in the other semester.

Recreation Curriculum

	Semester	
	I	II
<i>Junior Year</i>		
Soc. 2—Principles of Sociology.....	3	....
Rec. 10—History and Introduction to Recreation.....	2	....
Music 1—Music Appreciation.....	3	....
Soc. 118—Community Organization		3
Sp. 113—Play Production		3
Crafts 2—Simple Crafts		2
Rec. 120—Camp Administration and Leadership.....		3
Rec. 130—Principles and Practice of Recreation.....		3
Electives	8 9	2 3
Total	M 17 W 16	M 17 W 16
<i>Senior Year</i>		
Rec. 100—Co-recreational Games and Programs.....		2
Rec. 110—Nature Lore		1-3
Rec. 140—Observation and Service in Recreation (see note below).....	5	....
Rec. 160—Recreational Golf		1
Rec. 170—Organization and Administration of Recreation.....		3
P. E. 101—Organization and Officiating in Intramurals.....	2	....
P. E. 124, 126—Methods and Materials in Team Sports.....	2	2
Electives	8	5-7
Total	15	16

NOTE: Students desiring certification as teachers must plan their courses to meet College of Education requirements in practice teaching.

Minor Electives

Any student may develop a minor in Physical Education, Health, or Recreation by completing twenty (20) semester hours of work in that field and four (4) hours from other fields in this Department.

Study of Home Furnishings
Home Economics, College of Education



COURSE OFFERINGS

The University reserves the right to withdraw or discontinue any course for which an insufficient number of students have registered to warrant giving the course. In such an event, no fee will be charged for transfer to another course.

Courses are designated by numbers as follows:

1 to 99: courses for undergraduates.

100 to 199: courses for advanced undergraduates and graduates. (Not all courses numbered 100 to 199 may be taken for graduate credit.)

200 to 299: courses for graduates only.

A course with a single number extends through one semester. A course with a double number extends through two semesters.

Courses not otherwise designated are lecture courses. The number of hours' credit is shown by the arabic numeral in parentheses after the title of the course.

A separate schedule of courses is issued each semester, giving the hours, places of meeting, and other information required by the student in making out his program. Students obtain these schedules when they register.

EDUCATION

Courses Primarily for Freshmen and Sophomores

Ed. 2. Introduction to Education (2)—First and second semesters. Required of freshmen in Education and recommended for other freshmen who are interested in teaching.

An exploratory or guidance course designed to help students choose wisely in their preparation for the teaching profession. Types of positions, teacher supply and demand, favorable and unfavorable aspects of teaching, and types of personal and professional competence required of teachers are among the topics included. The testing and observational program of the College of Education is begun in this course. Fee, \$1.00. (Wiggin.)

Ed. 6. Observation of Teaching (1).

Twenty hours of directed observation. Reports, conferences, and criticisms.

Ed. 52. Children's Literature (2)—Second semester and summer session. Prerequisite, English 1, 2. (Bryan.)

A study of literary values in prose and verse for children. (Bryan.)

For Advanced Undergraduates and Graduates

Ed. 100. History of Education I (2)—First semester.

A study of educational institutions and thought through the ancient, mediaeval, and early modern periods. (Wiggin.)

Ed. 101 History of Education II (2)

Emphasis is placed on the post-Renaissance periods.

Ed. 102. History of Education in the United States (2)—Second semester.

A study of the origins and development of the chief features of the present system of education in the United States. (Wiggin.)

Ed. 105. Comparative Education—European (2)—First semester.

A study of national systems of education with the primary purpose of discovering their characteristic differences and formulating criteria for judging their worth. (Benjamin.)

Ed. 106. Comparative Education—Latin American (2)—Second semester.

This course is a continuation of Ed. 105, with emphasis upon the national educational systems of the Western Hemisphere. (Benjamin.)

Ed. 107. Philosophy of Education I (2)

A study of the great educational philosophers and their contributions to modern education. Earlier periods.

Ed. 108. Philosophy of Education II (2)

Systems of thought affecting the development of education with emphasis on recent periods and the United States.

Ed. 110. The Teacher and School Administration (2)

This course is designed to acquaint the classroom teacher with the general field of school administration. It considers the relationships of the teacher to the several administrative and supervisory officials and services in the system, with emphasis on the teacher's role in the organization.

Ed. 114. Educational Foundations (2).

This course is devoted to the examination of education and of the school with its tasks in the light of the more recent psychology and a social outlook in a democracy.

Ed. 121. The Language Arts in the Elementary School (2)

This course is concerned with present trends in the teaching of reading, spelling, handwriting, written and oral language, and creative expression. Special emphasis is given to the use of the skills in meaningful situations having real significance to the pupils.

Ed. 122. The Social Studies in the Elementary School (2)

The emphasis in this course is on pupil growth through social experiences. Consideration is given to the utilization of environmental resources, curriculum, organization and methods of teaching, and evaluation of newer methods and materials in the field.

Ed. 123. The Child and the Curriculum (2).

This course will emphasize the relation of the elementary school curriculum to child growth and development. Recent trends in curriculum organization; the effect of school environment on learning; readiness to learn;

and adapting curriculum content and methods to the maturity levels of children will be emphasized.

Ed. 124. Creative Expression in the Elementary School I (2).

This course should prove practical to classroom teachers and supervisors since it will attempt to consider the so-called special subjects in their relation to children and the course of study. It is based on the point of view that the classroom teacher is the best teacher of his children and as such is responsible for the day by day development of special areas as an integrated part of the total program. Creativity as the natural expression of ideas and as a means of communication will be stressed in both language and manual arts. The relation of creativity to the integration of personality will be emphasized.

Ed. 125. Creative Expression in the Elementary School II (2)—Prerequisite, Ed. 124 or taken concurrently.

Following on Ed. 124, this course allows for specialization in selected phases of the creative arts. Separate sections will be scheduled in such fields as art, dramatics, and music.

District of Columbia.

(Newell.)

Ed. 126. The Elementary School Curriculum (2)

A study of important developments in elementary education with particular attention to methods and materials which may be used to improve the development of pupils in elementary schools. Problems which are encountered in day-to-day teaching situations receive much attention.

***Ed. 130. Theory of the Junior High School (2)**—Second semester.

This course gives a general overview of the junior high school. It includes consideration of the purposes, functions, and characteristics of this school unit; a study of its population, organization, program of studies, methods, staff, and other similar topics, together with their implications for prospective teachers.

***Ed. 131. Theory of the Senior High School (2)**—Second semester.

The secondary school population; the school as an instrument of society; relation of the secondary school to other schools; aims of secondary education; curriculum and methods; extra-curricular activities; guidance and placement; teacher certification and employment in Maryland and the District of Columbia.

Ed. 133. Methods of Teaching the Social Studies (2)—Offered in Baltimore.

The course is designed to give practical training in the everyday teaching situation. Emphasis is placed on the use of various lesson techniques, audio and visual aids, reference materials, and testing programs. Attention is given to the adaptation of teaching methods to individual and group

* Credit is accepted for Ed. 130 or Ed. 131, but not for both courses.

differences. Consideration is given to present tendencies and aims of instruction in the social studies.

Ed. 134. Materials and Procedure for the Senior High School Core Curriculum (2).

This course is designed to bring practical suggestions to teachers who are in charge of core classes in senior high schools. Materials and teaching procedures for specific units of work are stressed.

Ed. 137. Science in the Junior High School (2)—Summer school.

A study of the place, function and content of science in junior high school programs. Applications to core curriculum organization.

Ed. 140. Curriculum, Instruction, and Observation (3)—Second semester.

This course is offered in separate sections for the various subject matter areas, namely, English, social studies, foreign language, science, mathematics, art education, business education, industrial education, music education, nursing education, and physical education. Registration cards must include the subject-matter area as well as the name and number of the course. Graduate credit is allowed only by special arrangement.

In each section the objectives, selection and organization of subject matter, appropriate methods, lesson plans, textbooks, and other instructional materials, measurement, and other topics pertinent to the particular subject matter area are treated.

Twenty periods of observation.

(Staff.)

Ed. 141. High School Course of Study-English (2)—First semester.

This course is concerned with the selection and organization of content for English classes in secondary schools. Subject matter is analyzed to clarify controversial elements of form, style, and usage.

(Bryan.)

Ed. 142. High School Course of Study-Literature (2).

Literature adapted to the various grade levels of junior and senior high schools is studied.

(Bryan.)

Ed. 144. Materials and Procedure for the Junior High School Core Curriculum (2)

This course is designed to bring practical suggestions to teachers who are in charge of core classes in junior high schools. Materials and teaching procedures for specific units of work are stressed.

Ed. 145. Principles of High School Teaching (2)—First and second semesters.

The class sessions of Ed. 149 but with no student teaching.

(Brechtbill.)

Ed. 146. The Teaching of Physics (3)—Second semester. Two lectures and one three-hour laboratory period a week.

This course is designed to acquaint the student with classroom and laboratory teaching of Physics.

Lecture demonstration and laboratory fee, \$6.00.

(R. Morgan.)

Ed. 147. Audio-Visual Education (2)—First semester.

Sensory impressions in their relation to learning; projection apparatus, its cost and operation; slides, film-strips, and films; physical principles underlying projection; auditory aids to instruction; field trips; pictures, models, and graphic materials; integration of sensory aids with organized instruction. Fee, \$1.00. (Brechtbill.)

Ed. 148. Methods and Practice of Teaching (2-6)—First and second semesters. Prerequisite, Ed. 140, grade-point average of 2.275, and approval of faculty. Undergraduate credit only.

Forty-five periods of observation, participation, and teaching in a high school class under the direction of the regular teacher and the university adviser. Two hours of class sessions weekly, identical with those of Ed. 149, are included. Applications must be made as for Ed. 149.

Students should arrange their university schedules so as to allow ample time for the student teaching assignment.

Open only to experienced teachers and other exceptional students.

For scheduling plan, see Ed. 149. (Brechtbill and Staff.)

Ed. 149. Methods and Practice of Teaching (9)—First and second semesters. Prerequisite, Ed. 140, grade-point average of 2.275, and approval of faculty. Undergraduate credit only.

Students who register for this course serve as apprentice teachers in the schools to which they are assigned. Full time for one-half of one semester, either first or second half, is devoted to this work. Two hours of weekly class meetings throughout the semester are included in which study is made of the principles and methods of teaching.

In the half-semester not devoted to student teaching, certain courses are blocked, including the following: Psych. 110, Ed. 150, Ed. 160. These courses are regularly offered each half of both semesters.

Application forms for this course, properly filled in, must be submitted to the Director of Student Teaching not less than thirty days before registration. (Brechtbill and Staff.)

Ed. 150. Educational Measurement (2)—First and second semesters.

A study of tests and examinations with emphasis upon their construction and use. Types of tests; purposes of testing; elementary statistical concepts and processes used in summarizing and analyzing test results; school marks. For scheduling plan, see Ed. 149. (Brechtbill.)

Ed. 151. Remedial Reading Instruction (2)—First semester.

Causes for reading disabilities; diagnostic techniques; and corrective methods are studied. Instructional materials are evaluated. The course is designed for both elementary and secondary school teachers. (Schindler.)

Ed. 152. The Adolescent: Characteristics and Problems (2).

This course deals with the intellectual, emotional, social, and vocational problems which arise in the transitional period between childhood and adulthood, the secondary school period.

Ed. 153. The Improvement of Reading (2)

This course is intended for teachers working at the intermediate and secondary school levels. Attention is given to the teaching of reading in different school subjects, the selection of reading materials, the study of individuals with reference to causes of reading deficiencies, types of reading lessons, and certain elements of psychology essential to intelligent consideration of problems in this field. (Schindler.)

Ed. 160. Educational Sociology—Introductory (2)—First and second semesters.

This course deals with data of the social sciences which are germane to the work of teachers. Consideration is given to implications of democratic ideology for educational endeavor, educational tasks imposed by changes in population and technological trends, the welfare status of pupils, the socio-economic attitudes of individuals who control the schools, and other elements of community background which have significance in relation to schools. For scheduling plan, see Ed. 149. (Schindler.)

Ed. 161. Guidance in Secondary Schools (2).

A general orientation course in the principles of guidance and in the organization and administration of guidance programs. It is also designed to provide a general understanding of guidance procedures in terms of the day-by-day demands made upon the classroom teacher in the guidance of youth in his classes and in the extra-curricular activities which he sponsors. (Siewers.)

Ed. 162. Mental Hygiene in the Classroom (2).

The practical application of the principles of mental hygiene to classroom problems.

Ed. 163, 164 and 165. Community Study Laboratory I, II and III (2, 2, 2).

This course involves experience from the educational standpoint with the agencies, institutions, cultural patterns, living conditions, and social processes which play significant roles in shaping the behavior of children and adults and which must be understood by individuals working toward school and community improvement. Each participant becomes a member of a group in a given area of study and concentrates on problems which have direct application in his school situation. Readings are integrated with techniques of study. (Staff.)

Ed. 170. Introduction to Special Education (2)

This course is designed to give teachers, principals, attendance workers, and supervisors an understanding of the needs of all types of exceptional children. Preventive and remedial measures are stressed.

Ed. 171. Education of Retarded and Slow-Learning Children (2)

A study of retarded and slow-learning children, including discovery, analysis of causes, testing techniques, case studies, and remedial educational measures.

Ed. 183. Recent Trends in Curriculum and Methods in the Elementary School (2)

Emphasis in this course will be placed on recent trends in elementary education, newer instructional practices and classroom procedures, organization of learning experiences, and modern techniques of evaluation. New methods and materials will be critically evaluated. Opportunity for the study and discussion of individual problems will be given.

Ed. 184. Outdoor Education (6)—Summer.

A full-time program for teachers, administrators, recreation leaders, and social workers in functionalized child development through utilization of the surrounding natural environment and resources. Guided group work implements the acquired techniques for use with children in developing education in democratic living, worthy use of leisure, certain character traits and also for vitalizing such subject-matter areas as mathematics, language, arts, social and natural sciences, music, health and physical education, graphic and plastic arts.

Ed. 191. Principles of Adult Education (2)

The course includes a study of adult educational agencies, both formal and informal, with special reference to the development of adult education in the United States, the interests and abilities of adults, and the techniques of adult learning. Emphasis is laid on practical aids for teachers of various types of adult groups. (Wiggin.)

Ed. 195. Teaching Traffic Safety and Automobile Operation (2). (Offered in Summer School.) Prerequisite, two years driving experience.

Practical and theoretical study of the driver, driver and pedestrian responsibilities, the automobile and its operation, traffic problems and regulations, and the organization and administration of the course in secondary schools. Dual control cars used.

For Graduates**Ed. 203. Problems in Higher Education (2).**

A study of present problems in higher education. (Benjamin.)

Ed. 205. Seminar in Comparative Education (2). (Benjamin.)

Ed. 207. Seminar in Philosophy of Education (2).

Ed. 209. Seminar in History of Education (2). (Wiggin.)

Ed. 210. The Organization and Administration of Public Education (2)—First semester.

The basic course in school administration. The course deals with the organization and administration of school systems—at the local, state, and federal levels; and with the administrative relationships involved. (Newell.)

Ed. 211. The Organization, Administration, and Supervision of Secondary Schools (2)—Second semester.

The work of the secondary school principal. The course includes topics such as personnel problems, supervision, school-community relationships, student activities, schedule making, and internal financial accounting.

(Newell.)

Ed. 212. School Finance and Business Administration (2)

An introduction to the finance phase of public school administration. The course deals with the basic principles of school finance; the implications of organization and control; the planning, execution, and appraisal of the activities involved in public school finance such as budgeting, taxing, purchasing, service of supplies, and accounting.

(Van Zwoll.)

Ed. 213. Administration and Teaching in Junior High School (2)

This course is concerned with persistent problems and related administrative organization and policy. It is designed for teachers and administrators. Emphasis is placed on ways and means whereby junior high schools may realize their functions fully.

Ed. 214. School Buildings and Equipment (2).

An orientation course in which school plant and plant planning are considered as contributing to instructional programs. This course supplies the basis for analyzing existing plant, for determining need for new plant, for selecting and developing school building sites, and for planning school building. Theory is put into practice in the development of line drawings for school building design in terms of the instructional program. Opportunity is provided to work on specific equipment problems.

(Van Zwoll.)

Ed. 215. Public Education in Maryland (2)

A study of Maryland Public School system with special reference to school law.

(Newell.)

Ed. 216. High School Supervision (2). Prerequisite, teaching experience.

This course deals with recent trends in supervision; the nature and function of supervision; planning supervisory programs; evaluation and rating; participation of teachers and other groups in policy development; school workshops; and other means for the improvement of instruction. Fee, \$1.00.

(Newell.)

Ed. 217. Administration and Supervision in Elementary Schools (2).

A study of the problems connected with organizing and operating elementary schools and directing instruction.

Ed. 218. School Surveys (2-6).

This course includes study of school surveys with emphasis on problems of school organization and administration, finance and school plant planning. Field work in school surveys is required in this course. (Newell.)

Ed. 219. Seminar in School Administration (2). (Van Zwoll.)**Ed. 220. Pupil Transportation (2)**

This course includes consideration of the organization and administration of state, county, and district pupil transportation service with emphasis on safety and economy. The planning of bus routes; the selection and training of bus drivers, and maintenance mechanics; the specification of school buses; and procurement procedures are included in this course.

Ed. 221. Functional School Plant Planning (2)

This is an advanced course in school plant planning problems. Emphasis is given to analysis of the educational program and planning of physical facilities to accommodate that program. Ed. 214 is a prerequisite to this course. However, students with necessary background may be admitted without completion of Ed. 214. (Van Zwoll.)

Ed. 222. Seminar in Supervision (2)—Prerequisite, Ed. 216. Prerequisite may be waived upon approval of the instructor. (Newell.)

Ed. 223. Practicum in Personnel Relationships (2-6)

Study of personnel relationships. Opportunities are provided for students to work with groups of laymen or school staff members on local school problems. (Newell.)

Ed. 224. Internship in School Administration (12-16)

Internships in administration or supervision may be provided for a few students who have had teaching experience. The intern will be assigned to assist a principal, supervisor, or some other staff member in a school or school system. In addition to the experience in the school situation, a program of studies will be planned by the intern, the appropriate member of the school staff, and the sponsor from the university. The sponsor will maintain a close working relationship with the intern and the other persons involved. (Newell.)

Ed. 225. School Public Relations (2).

A study of the relationships between the public school as a social institution and the community of which it is a part. This course deals with the agents who participate in the interpretative process, with propaganda and the schools, with parent-teacher associations and other lay advisory groups, and with such means of publicity as the newspaper, radio, and school publications. (Van Zwoll.)

Ed. 226. Child Accounting (2).

An inquiry into the keeping of essential records pertaining to the pre-school, school, and post-school life of individuals. This course explores

the area of child accounting in terms of need, development, and current practice in local districts and in the state. Census taking, individual record practices, and administrative record procedures are taken into consideration. (Van Zwoll.)

Ed. 227. Public School Personnel Administration (2).

An examination of practices with respect to personnel administration. This course serves to aid in the development of principles applying to personnel administration. Personnel needs, the means for satisfying personnel needs, personnel relationships, tenure, salary schedules, leaves of absence, and retirement plans are reviewed. Local and state aspects of the personnel problem are identified. (Van Zwoll.)

Ed. 229. Seminar in Elementary Education. (2).

Attention will be centered on selected problems in curriculum making, teaching, and child development. Members of the class may concentrate on seminar papers, prepare materials for their schools, or read extensively to discover viewpoints and research data on problems and experimental practices. (Schindler.)

Ed. 232. Student Activities in the High School (2).

This course offers a consideration of the problems connected with the so-called "extra-curricular" activities of the present-day high school. Special consideration will be given to (1) philosophical bases, (2) aims, (3) organization, and (4) supervision of student activities such as student council, school publications, musical organizations, dramatics, assemblies, and clubs. Present practices and current trends will be evaluated.

Ed. 236. Curriculum Development in the Secondary School (2)

Curriculum planning; philosophical bases, objectives, learning experiences, organization of appropriate content, and means of evaluation.

Ed. 239. Seminar in Secondary Education (2).

Ed. 242. Coordination in Work-Experience Programs (2).

This course surveys and evaluates the qualifications and duties of a teacher-coordinator in a work-experience program. It deals particularly with evolving patterns in city and county schools in Maryland, and is designed to help teacher-coordinators, guidance counselors, and others in the supervisory and administrative personnel concerned with functioning relationships of part-time cooperative education in a comprehensive educational program. (Brown.)

Ed. 243. Application of Theory and Research to Arithmetic in Elementary Schools (2).

Implications of experimental practices, the proposals of eminent writers, and the results of research for the teaching of arithmetic in elementary schools. (Schindler.)

Ed. 244. Application of Theory and Research to the Language Arts in Elementary Schools (2).

Implications of experimental practices, the proposals of eminent writers, and the results of research for the language arts in the elementary schools. (Schindler.)

Ed. 245. Applications of Theory and Research to High School Teaching (2).

Implications of experimental practices, the proposals of eminent writers, and the results of research for the improvement of teaching on the secondary level. (Brechtbill.)

Ed. 247. Seminar in Science Education (2). (Brechtbill.)

Ed. 248. Seminar in Vocational Education (2). (Hornbake.)

Ed. 250. Analysis of the Individual (2)—Second semester.

This course is concerned with considering policies for adjusting the school to the pupil; using the school's special services—attendance, health, guidance—and records, reports, tests and inventories to promote a better understanding of the individual. Interpretation and use of data are stressed. (Sievers.)

Ed. 261. Counseling Techniques (2). Prerequisites, Ed. 161, Ed. 250. Prerequisites may be waived upon approval of the instructor.

This course deals with the various specialized techniques, procedures, and materials utilized by guidance specialists in the schools. Special stress is placed upon the interpretation of case data and techniques of counseling individual pupils. (Sievers.)

Ed. 262. Occupational Information (2)—Second semester.

The analysis of occupational trends in community, state and nation, and the organization of this information for the guidance of youth. It is designed to give counselors, teachers, school librarians and other workers in the fields of guidance and education a background of educational and occupational information which is basic for counseling and teaching. (Sievers.)

Ed. 263, 264. Aptitudes and Aptitude Testing (2, 2). (Offered in Baltimore.)

Ed. 268. Seminar in Educational Sociology (2). (Schindler.)

Ed. 269. Seminar in Guidance (2). (Sievers.)

Ed. 278. Seminar in Special Education (2).

Ed. 279. Seminar in Adult Education (2). (Wiggin.)

Ed. 280. Research Methods and Materials in Education (2).

A study of research in education, the sources of information and techniques available, and approved form and style in the preparation of research reports and theses.

Ed. 281. Source Materials in Education (2).

A course based on the text and work-book by Carter Alexander, "How to Locate Educational Information and Data." The work involves attendance at class for one hour with two additional hours of work in the library. Especially valuable for students interested in research.

Ed. 289. Research (1-6)—First and second semesters.

Students who desire credit for thesis work should use this number. Registration for this purpose should be as follows: "Educ. 289—Thesis."

Students who desire credit on a research project not intended for a thesis should also use this number. Registration for this purpose should be as follows: "Educ. 289—Research Problem: Brief statement of the Problem."

BUSINESS EDUCATION**For Advanced Undergraduates and Graduates****B. Ed. 100. Techniques of Teaching Office Skills (2)—First semester.**

An examination and evaluation of the aims, methods, and course contents of each of the office skill subjects offered in the high school curriculum.

(Patrick.)

B. Ed. 101. Methods and Materials in Teaching Office skills (2)

Problems in development of occupational competency, achievement tests, standards of achievement, instructional materials, transcription, and the integration of office skills.

(Patrick.)

B. Ed. 102. Methods and Materials in Teaching Bookkeeping and Related Subjects (2)

Important problems and procedures in the mastery of bookkeeping and related office knowledges and skills including a consideration of materials and teaching procedures.

(Patrick.)

B. Ed. 103. Basic Business Subjects in the Junior High School (2)

This course deals with the exploratory aspects of basic business subjects and fundamentals of consumer business education, available instructional materials, and teaching procedures.

B. Ed. 104. Basic Business Education in the Secondary Schools (2).

Consideration will be given to the vocational and consumer objectives; subject matter content; methods of organizing material; types of classroom activities; and teaching procedures in basic business subjects in the secondary schools.

(Patrick.)

B. Ed. 160. Curriculum Building for Work Experience Programs (2).

Developing a curriculum to fit students' immediate and future work needs; studying the job for work-school correlation of curriculum; using and adapting the packaged curriculum; building lesson plans for individualized or group study with attention to source files, visual aids, and

other course helps; keeping the curriculum current in the light of changing operations and trends in the field of work.

B. Ed. 162. Methods of Teaching in the Part-Time Cooperative (Distributive Education) Program (2).

Work study programs require an approach in teaching techniques somewhat different from that of the regular classroom. This course will include a study of the methods to be used in teaching the part-time cooperative student, e. g., discussion, committee, conference, individualized study. Emphasis will be placed on the development and use of visual aids, films, sound slides, field trips, and laboratory work in the classroom and on the job. Opportunity will be given for demonstration and practice.

B. Ed. 165. Organization and Operation of the Part-Time Cooperative (Distributive Education) Program (2).

A basic course essential for all those who teach or supervise part-time high school cooperative programs. Includes study of such topics as, setting and maintaining standards of performance for students, school, and training agencies; integrating the program in the high school; selection, placement, and follow-up of students; building good training agencies; promoting the program, and development of efficient forms and records.

B. Ed. 180. Merchandise Information for the Distributive Education Coordinator (2).

A technical course designed to provide the information necessary for teaching the manufacture, selling and care of merchandise. Opportunity is given to study specific items of merchandise and also to develop general techniques for learning about and keeping up-to-date on all items. Source files, bibliographies and visual aids will be considered.

B. Ed. 200. Administration and Supervision of Business Education (2)

Major emphasis on departmental organization, curriculum, equipment, budget making, guidance, placement and follow-up, visual aids, and the in-service training of teachers.

For administrators, supervisors, and teachers of business subjects.

B. Ed. 255. Principles and Problems of Business Education (2).

Principles and practices in business education; growth and present status; vocational business education; general business education; relation to consumer education and to education in general. (Patrick.)

HOME ECONOMICS EDUCATION

For Advanced Undergraduates and Graduates

H. E. Ed. 102. Problems in Teaching Home Economics (3)—First semester. Required of seniors in Home Economics Education. Prerequisite, H. E. Ed. 140.

A study of the managerial aspects of teaching and administering a home-making program; the physical environment, organization, and sequence of instructional units, resource materials, evaluation, home projects.

H. E. Ed. 140. Curriculum, Instruction, and Observation (3)—Second semester. Required of juniors in Home Economics Education.

The place and function of home economics education in the secondary school curriculum. Philosophy of education for home and family living; characteristics of adolescence, construction of source units, lesson plans, and evaluation devices; directed observation in junior and senior high school home economics departments.

H. E. Ed. 149. Teaching Secondary School Vocational Home Economics (9)—First and second semesters. Prerequisite, H. E. Ed. 140 and 102 or 102 parallel. See Ed. 149.

Observation and supervised teaching in approved secondary school home economics departments in Maryland and the District of Columbia.

H. E. Ed. 200. Seminar in Home Economics Education (2)—First semester.

H. E. Ed. 202. Trends in the Teaching and Supervision of Home Economics (2-4)

Study of home economics programs and practices in light of current educational trends. Interpretation and analysis of democratic teaching procedures, outcomes of instruction, and supervisory practices.

HUMAN DEVELOPMENT EDUCATION

The staff of the Institute for Child Study will offer a series of courses on human development and on the techniques of child study for members of the educational profession. The core of the offering is a group of six courses which describe the major processes and forces that shape the growth and development of human beings from conception to middle age. The first four of these courses may be taken in any combination or sequence but all of them should be completed before the last two are undertaken because the courses dealing with the emergence, development and adjustment of the Self require a basic synthesis of factual and conceptual knowledge from these other courses. These courses are open only to graduate students. Prerequisites are six semester hours of work in either biology or psychology or three semester hours in each. Each course carries two semester hours credit and should be accompanied or followed by the sequence of three courses called Laboratory in Human Development which involve the direct year-long study of children as individuals and in groups.

H. D. Ed. 100, 101. Principles of Human Development I & II (2, 2)

These courses give a general overview of the scientific principles that describe human development and behavior. Open to graduates or undergraduates.

H. D. Ed. 102, 103, 104. Child Development Laboratory I, II & III (2, 2, 2). Prerequisite, General or Educational Psychology or any course in Human Development.

This course involves the direct study of children throughout the school year. Each participant gathers a wide body of information about an individual; presents the accumulating data from time to time to the study group for criticism and group analysis, and writes an interpretation of the dynamics underlying the child's learning, behavior and development.

H. D. Ed. 112. Scientific Concepts in Human Development (3).

H. D. Ed. 112 must be taken concurrently with H. D. Ed. 113.

H. D. Ed. 113. Laboratory in Behavior Analysis (3)

H. D. Ed. 113 must be taken concurrently with H. D. Ed. 112.

H. D. Ed. 200. Organic Processes and Factors in Human Development (2)—First semester.

This course describes the major organic processes of: conception; biological inheritance; differentiation and growth of the body; capture, transmutation and use of energy; perception of the environment; coordination and integration of functions; adaptation to unusual demands and to frustration; normal individual variation in each of the above processes.

H. D. Ed. 201. Affectional Relationships and Processes in Human Development (2)—Second semester.

This course describes the normal development, expression and influence of love in infancy, childhood, adolescence and adulthood. It deals with the influence of parent-child relationships involving normal acceptance, neglect, rejection, inconsistency, and over-protection upon health, learning, emotional behavior and personality development. It analyzes the affectional developmental tasks and adjustment problems of adolescence, infancy, childhood, and early maturity.

H. D. Ed. 202. Socialization Processes in Human Development (2)

This course analyzes the processes by which human beings internalize the culture of the society in which they live. The major sub-cultures in the United States, their training procedures, and their characteristic human expressions in folk-knowledge, habits, attitudes, values, life-goals, and adjustment patterns are analyzed. Contrasts with other world cultures are examined to highlight the American way of life and to reveal its strengths and weaknesses.

H. D. Ed. 203. Peer-culture and Group Processes in Human Development (2)

This course analyzes the processes of group formation, role-taking and status-winning. It describes the emergence of the "peer-culture" during childhood and the evolution of the child society at different maturity levels to adulthood. It analyzes the developmental tasks and adjustment problems associated with winning, belonging and playing roles in the peer group.

H. D. Ed. 210. "Self"-developmental Processes in Human Development (2)

This course analyzes the nature of intelligence and of the learning processes, including the development of skills, concepts, generalizations, symbolizations, reasoning and imagination, attitudes, values, goals and purposes. It describes the nature and effects of individual variations in capacities and in experiences. The effects of various physical and growth processes, affectional relationships, socialization processes and peer group roles and status on the integration, development and realization of the individual self are analyzed.

H. D. Ed. 211. "Self"-adjustment Processes in Human Development (2)

This course analyzes the conditions, relationships, experiences and opportunities to function that are essential to full human development and the physical, emotional, mental and personality effects of the realization of these factors. It describes the more common adjustment problems experienced in our society at various maturity levels and analyzes the processes by which individuals adjust to them. It discusses the social and personal effects of the use of various adjustment mechanisms.

H. D. Ed. 212. Advanced Scientific Concepts in Human Development (3)

H. D. Ed. 212 must be taken concurrently with H. D. Ed. 213.

H. D. Ed. 213. Advanced Laboratory in Behavior Analysis (3).

H. D. Ed. 213 must be taken concurrently with H. D. Ed. 212.

H. D. Ed. 220, 221. Educational Implications of Human Development Research (2, 2)

Each student analyzes recent research in some aspect of human development, presents papers summarizing the research findings and discusses with the seminar the educational implications of the research he has analyzed. For advanced masters and doctors degree candidates. Prerequisite: consent of the instructor.

H. D. Ed. 230, 231. Field Program in Child Study I & II (2, 2)

This course offers apprenticeship training preparing properly qualified persons to become staff members in human development workshops, consultants to child study field programs and coordinators of municipal or regional child study programs for teachers or parents. Extensive field experience is provided. In general this training is open only to persons who have passed their preliminary examinations for the doctorate with a major in human development or psychology. Prerequisite: consent of instructor.

INDUSTRIAL EDUCATION

For each semester hour of credit for shop and drawing courses two or three periods of lecture and practice are scheduled depending upon the specific needs of the course.

Industrial Education 9, 10, and 11 constitute an art crafts sequence (Art Crafts I, II, and III). The courses are intended to assist persons who are preparing to teach art crafts in grade 7 of the public schools of Maryland or for teachers who have already undertaken this type of work in the schools. The work is appropriate also for persons who teach art crafts at any grade level and for those who teach art crafts in camps, clubs, adult evening classes, and the like.

Ind. Ed. 1. Mechanical Drawing (2)—First semester. Two laboratory periods a week.

This course constitutes an introduction to orthographic multi-view and isometric projection. Emphasis is placed upon the visualization of an object when it is represented by a multi-view drawing and upon the making of multi-view drawings.

This course carries through auxiliary views, sectional views, dimensioning, conventional representation and single stroke letters. Laboratory fee, \$3.00.

Ind. Ed. 2. Elementary Woodworking (2)—First semester. Two laboratory periods a week.

This is a woodworking course which involves the use of hand tools almost exclusively. The course is developed so that the student uses practically every common woodworking hand tool in one or more situations. There is also included elementary wood finishing, the specifying and storing of lumber, and the care and conditioning of tools used. Laboratory fee, \$3.00.

Ind. Ed. 9. Art Crafts I (2)—First semester and Summer Session. Two laboratory periods a day.

The materials used in Art Crafts I are woods, metals, leathers and plastics. Each student is provided the opportunity of doing a variety of types of work in the four media. Laboratory fee \$3.00.

Ind. Ed. 10. Art Crafts II (2)—Summer session. Two laboratory periods a day.

Art Crafts II offers work experiences in model building, ceramics, graphic arts, and paper construction. Laboratory fee, \$3.00.

Ind. Ed. 11. Art Crafts III (2)—Summer session. Two laboratory periods a day.

Art Crafts III provides instruction in the principles of design which are pertinent to craft work and takes up reed and raffia, threads (weaving, hooking, knitting), and seasonal activities. Laboratory fee, \$3.00.

Ind. Ed. 21. Mechanical Drawing (2)—Second semester. Two laboratory periods a week. Prerequisite, Ind. Ed. 1.

A course dealing with working drawings, machine design, pattern layouts, tracing and reproduction. Detail drawings followed by assemblies are presented. Laboratory fee, \$3.00.

Ind. Ed. 22. Machine Woodworking I (2)—Second semester. Two laboratory periods a week. Prerequisite, Ind. Ed. 2.

Machine Woodworking I offers initial instruction in the proper operation of the jointer, band saw, variety saw, jig saw, mortiser, shaper, and lathe. The types of jobs which may be performed on each machine and their safe operation are of primary concern. The medium of instruction is school-shop equipment, hobby items, and useful home projects. Laboratory fee, \$3.00.

Ind. Ed. 23. Arc and Gas Welding (1)—Second semester. One laboratory period a week.

A course designed to give the student a functional knowledge of the principles and use of electric and acetylene welding. Practical work is carried on in the construction of various projects using welded joints. Instruction is given in the use and care of equipment, types of welded joints, methods of welding, importance of welding processes in industry, safety considerations, etc. Laboratory fee, \$3.00.

Ind. Ed. 24. Sheet Metal Work (2)—First semester. Two laboratory periods a week.

Articles are made from metal in its sheet form and involve the operations of cutting, shaping, soldering, riveting, wiring, folding, seaming, beading, burring, etc. The student is required to develop his own patterns inclusive of parallel line development, radial line development, and triangulation. Common sheet metal tools and machines are used in this course. Laboratory fee, \$3.00.

Ind. Ed. 26. Art Metal Work I (2)—Second semester. Two laboratory periods a week.

An introductory course in designing and constructing art products in aluminum, copper and brass. The processes covered include surface decoration (hammering, piercing, etching, enameling), heat treatment and finishing. Laboratory fee, \$3.00.

Ind. Ed. 28. Electricity I (2)—First semester. Two laboratory periods a week.

An introductory course to electricity in general. It deals with the electrical circuit, elementary wiring problems, the measurement of electrical energy, and a brief treatment of radio such as may be offered at the junior high school level. Laboratory fee, \$3.00.

Ind. Ed. 31. Mechanical Drawing (2)—First semester. Two laboratory periods a week. Prerequisites, Ind. Ed. 1 and 21.

A course dealing with the topics enumerated in Ind. Ed. 21 but on a more advanced basis. The reading of prints representative of a variety of industries is a part of this course. Laboratory fee, \$3.00.

Ind. Ed. 41. Architectural Drawing (2)—Second semester. Two laboratory periods a week. Prerequisite, Ind. Ed. 1, or equivalent.

Practical experience is given in the design and planning of houses and other buildings. Working drawings, specifications and blue-prints are featured. Laboratory fee, \$3.00.

Ind. Ed. 42. Machine Woodworking II (2)—First semester. Two laboratory periods a week. Prerequisite, Ind. Ed. 22, or equivalent.

Advanced production methods with emphasis on cabinetmaking and design. Laboratory fee, \$3.00.

Ind. Ed. 48. Electricity II (2)—Second semester. Two laboratory periods a week.

Principles involved in A-C and D-C electrical equipment, including heating, measurements, motors and control, electro-chemistry, the electric arc, inductance and reactance, condensers, radio, and electronics. Laboratory fee, \$3.00.

Ind. Ed. 50. Methods of Teaching Vocational and Occupational Subjects (2). (Offered in Baltimore.)

For vocational and occupational teachers of shop and related subjects. The identification and analysis of factors essential to helping others learn; the types of teaching situations and techniques; the use of instruction sheets; measuring results and grading student progress in shop and related technical subjects. (Wall.)

Ind. Ed. 60. Observation and Demonstration Teaching of Vocational and Occupational Subjects (2). (Offered in Baltimore.) Prerequisite, Educational Psychology and/or Methods of Teaching Vocational and Occupational Subjects.

Particularly for vocational and occupational teachers. Sixteen hours of directed observation and demonstration teaching. Reports, conferences, and criticisms constitute the remainder of scheduled activities in this course.

Ind. Ed. 66. Art Metal Work (2)—Summer. Two laboratory periods a day. Prerequisite, Ind. Ed. 26, or equivalent.

Advanced practicum. It includes methods of bowl raising and bowl ornamenting. Laboratory fee, \$3.00.

Ind. Ed. 67. Cold Metal Work (2)—Second semester. Two laboratory periods a week.

Metal in the form of bars, rods and tubes are shaped cold to produce "ornamental iron" and bench metal products. The use of the hacksaw, file, drill press, taps and dies, the designing and forming of scrolls and the finishes appropriate for cold metal work are representative of the course content. Laboratory fee, \$3.00.

Ind. Ed. 69. Machine Shop Practice I (2)—First semester. Two laboratory periods a week. Prerequisite, Ind. Ed. 1, or equivalent.

Bench work, turning, planing, milling, and drilling. Related technical information. Laboratory fee, \$3.00.

Ind. Ed. 89. Machine Shop Practice II (2)—Second semester. Two laboratory periods a week. Prerequisite, Ind. Ed. 69, or equivalent.

Advanced shop practicum in thread cutting, grinding, boring, reaming, and gear cutting. Work-production methods employed. Related technical information. Laboratory fee, \$3.00.

Ind. Ed. 94. Shop Maintenance (2)—Summer. Prerequisite, 8 semester hours of shop credit, or equivalent.

Skill developing practice in the up-keep and care of school shop tools and equipment.

Ind. Ed. 101. Operational Drawing (2)—Two laboratory periods a day. Prerequisite, Ind. Ed. 1, or equivalent.

A comprehensive course designed to give students practice in the modern drafting methods of industry. Laboratory fee, \$3.00.

Ind. Ed. 102. Advanced Woodfinishing and Design (2)—Two laboratory periods a day. Prerequisite, Ind. Ed. 22, or equivalent.

Advanced finishing room methods applied. The application of color and its use in the improvement of design. Laboratory fee, \$3.00.

Ind. Ed. 104. Advanced Practices in Sheet Metal Work (2)—Two laboratory periods a day. Prerequisite, Ind. Ed. 24, or equivalent.

Study of the more complicated processes involved in commercial items. Calculations and pattern making are emphasized. Laboratory fee, \$3.00.

Ind. Ed. 105. General Shop (2)—Second semester.

Designed to meet needs in organizing and administering a secondary school general shop. Students are rotated through skill and knowledge developing activities in mechanical drawing, electricity, woodworking, and general metal working. Laboratory fee, \$3.00.

Ind. Ed. 106. Art Metal Work (2)—Summer. Two laboratory periods a day.

Simple operations in the art of making jewelry including ring making, stone setting, etc. Laboratory fee, \$3.00.

Ind. Ed. 108. Electricity III (2)—Two laboratory periods a day. Prerequisite, Ind. Ed. 28, or equivalent.

Experimental development of apparatus and equipment for teaching the principles of electricity. Laboratory fee, \$3.00.

Ind. Ed. 109. Experimental Electricity and Electronics—A, B, C, D (2, 2, 2, 2). (Offered in Baltimore.)

Ind. Ed. 110. Foundry (1)—Second semester. One laboratory period a week.

Bench and floor molding and elementary core making. Theory and principles covering foundry materials, tools and appliances. Laboratory fee, \$3.00.

Ind. Ed. 140 (Ed. 140). Curriculum, Instruction, and Observation (3)—First semester.

Major functions and specific contributions of Industrial Education; their relation to the general objectives of the junior and senior high schools; selection and organization of subject matter in terms of modern practices and needs; methods of instruction; expected outcomes; measuring results; professional standards. Twenty periods of observation. (Hornbake.)

Ind. Ed. 149. Methods and Practice of Teaching (9)—First and second semesters. See Ed. 149.

Ind. Ed. 150. Training Aids Development (2)—Second semester.

Study of the aids in common use as to their source and application. Special emphasis is placed on principles to be observed in making aids useful to shop teachers. Actual making and application of such an aid will be required. (Wall.)

Ind. Ed. 160. Essentials of Design (2)—Second semester. Two laboratory periods a week. Prerequisites, Ind. Ed. 1 and basic shop work.

A study of the basic principles of design and practice in their application to the construction of shop projects. It treats the art elements of line, mass, color, and design. Laboratory fee, \$3.00.

Ind. Ed. 164. Shop Organization and Management (2)—Second semester.

This course covers the basic elements of organizing and managing an Industrial Education program including the selection of equipment and the arrangement of the shop. (Wall.)

Ind. Ed. 165. Modern Industry (2)—Summer session.

This course provides an overview of factory organization and management. Representative basic industries are studied from the viewpoints of personnel and management organization, industrial relations, production procedures, distribution of products, and the like.

Ind. Ed. 166. Educational Foundations of Industrial Arts (2)—First semester.

A study of the factors which definitely place Industrial Arts education in any well-rounded program of general education. Lectures, class discussions, readings and reports. (Brown and Hornbake.)

Ind. Ed. 167. Problems in Occupational Education (2). (Offered in Baltimore.)

The purpose of this course is to secure, assemble, organize, and interpret data relative to the scope, character and effectiveness of occupational education.

Ind. Ed. 168. Trade or Occupational Analysis (2)—First semester.

Provides a working knowledge of occupational and job analysis which is basic in organizing Industrial Education courses of study. This course should precede Ind. Ed. 169.

Ind. Ed. 169. Construction of Vocational and Occupational Courses of Study (2).

Surveys and applies techniques of building and reorganizing courses of study for effective use in vocational and occupational schools.

Ind. Ed. 170. Principles and Practices of Vocational Education (2)—Summer Session.

The course develops the Vocational Education movement as an integral phase of the American program of public education.

Ind. Ed. 171. History of Vocational Education (2)—Summer Session.

An overview of the development of Vocational Education from primitive times to the present. The evolution of Industrial Arts is also considered.

For Graduates

Ind. Ed. 207. Philosophy of Industrial Arts Education (2)—First semester.

This course is intended to assist the student in his development of a point of view as regards Industrial Arts and its relationship with the total educational program. He should, thereby, have a "yardstick" for appraising current procedures and proposals and an articulateness for his own professional area. (Hornbake.)

Ind. Ed. 214. School Shop Planning and Equipment Selection (2)—Second semester.

This course deals with principles involved in planning a school shop and provides opportunities for applying these principles. Facilities required in the operation of a satisfactory shop program are catalogued and appraised. (Hornbake.)

Ind. Ed. 216. Supervision of Industrial Arts (2)—Second semester.

(Hornbake.)

Ind. Ed. 220. Organization, Administration and Supervision of Vocational Education (2)—Summer Session.

This course surveys objectively the organization, administration, supervision, curricular spread and viewpoint, and the present status of vocational Education.

Ind. Ed. 240. Research in Industrial Arts and Vocational Education (2)—First and second semesters.

This is a course offered by arrangement for persons who are conducting research in the areas of Industrial Arts and Vocational Education. (Staff.)

Ind. Ed. 241. Content and Method of Industrial Arts (2)—Second semester.

Various methods and procedures used in developing courses of study are examined and those suited to the field of Industrial Arts education are applied. Methods of and devices for Industrial Arts instruction are studied and practiced. (Hornbake.)

Ind. Ed. 248. Seminar in Industrial Arts and Vocational Education (2)—Second semester.

NURSERY SCHOOL—KINDERGARTEN EDUCATION

C. Ed. 2. Orientation, Observation, and Record Taking (2)—Second semester.

Orientation to nursery school and kindergarten; introduction to methods of observing and recording behavior of children at different age levels. (McNaughton, Whitney.)

C. Ed. 50, 51. Observation and Experience in Nursery School and Kindergarten (1, 1).

Student must schedule one hour, twice a week between nine and twelve, or one and three. (Staff.)

For Advanced Undergraduates and Graduates

C. Ed. 100. Child Development I—Infancy (3)—First semester.

Understanding the pattern of growth. Factors influencing the physical, mental, and emotional development of the infant; relation of care during the first eighteen months to personality development. (McNaughton.)

C. Ed. 101. Child Development II—Early Childhood (3)—Second semester.

A study of the developmental growth of the child from eighteen months to five years; characteristics of each age level; experiences which help the child in his motor, mental, emotional and social development; observation in the nursery school; study of one child. (McNaughton.)

C. Ed. 102. Child Development III—The Child from Five to Ten (2)—First and second semesters.

Development, characteristics and interests of the middle-age child; interpersonal relations as affected by home, school, and community; observations in kindergarten, public schools, and community organizations.

C. Ed. 110. Child Development IV (3)—First and second semesters.

A study of the developmental growth of the child from birth to five years; observation in the nursery school. Designed for students in other colleges. Laboratory fee, \$1.00.

C. Ed. 112. Play and Play Materials (2)—Prerequisite, C. Ed. 101.

Study of play materials and play equipment in relation to use by different age levels; construction of simple equipment. (Flannery.)

C. Ed. 113. Education of the Young Child I (2).

A study of the nature and needs of the child from two to six years of age, with emphasis upon learning tendencies; the child's relation to the materials, experiences, and the people of his world at home and at school. (McNaughton.)

C. Ed. 114. Education of the Young Child II—The Social and Emotional Needs of the Young Child (2).

An attempt to understand what lies beneath outward behavior rather than on conformity as such; acceptance of the child's feelings; helping the child to live richly and fully on his own level; seeing the child as a whole; working with the parents and the home to bring about the most favorable adjustment of the child. (McNaughton.)

C. Ed. 115. Children's Activities and Activities Materials (3)—Second semester. Prerequisites, C. Ed. 100, 101, or 110.

For Nursery School and Kindergarten majors.

C. Ed. 116, 117. Creative Expression; Art, Music, Dance (2-3, 2-3).

Creative experience in the arts on the level of the student; correlation of the arts as related to the abilities of the child in terms of his development.

C. Ed. 119. Curriculum, Instruction, and Observation—Cooperative Nursery School (2-3).

C. Ed. 140. Curriculum, Instruction, and Observation—Nursery School (3)—First and second semesters. Prerequisites, C. Ed. 100 and 101, or C. Ed. 110.

Standards and organization of nursery school; study of age levels and methods of guidance; selection and use of equipment; observation in nursery school.

C. Ed. 145. Guidance in Behavior Problems (3)—First semester.

Handling of individual and group problems on the pre-school level; gathering of objective data; recording and observation; parent-teacher relationships, with special handling of child; guidance resources of community. (Whitney.)

C. Ed. 149. Teaching Nursery School (4-8)—First and second semesters.

Teaching experience in the University Nursery School and in those of nearby communities. (Whitney.)

C. Ed. 150. Curriculum, Instruction, and Observation—Kindergarten (2-3)—Second semester.

A study of the interests, needs and activities of children living together in the kindergarten; discussion and workshop.

C. Ed. 159. Teaching Kindergarten (4-8)—First and second semesters. Teaching experience in the University kindergarten.

C. Ed. 160. Speech Problems in Child Development (2).

Problems in delayed and distorted speech in nursery school and kindergarten children as related to child development: techniques in clinical work; lecture and clinic.

C. Ed. 161. Behavior Problems of Childhood and Adolescence (2).

Problems of child and adolescent in growing up; interrelation of child with his family, teacher, classmates and gang.

C. Ed. 165. Leadership Training (2).

Designed for leaders in Parent-Teacher groups and in other organizations. Setting up the duties of a leader, participants, observer and recorder; developing methods for discussion groups; discussion of special problems of organization.

NURSING EDUCATION

N. Ed. 2. Introduction to Nursing Education (2)—(Offered in Baltimore.)

Exploratory and guidance course for nursing education students. Types of positions in schools of nursing, teacher supply and demand in such schools, and the types of professional and personal competence required of teachers in nursing schools are among the topics included. This course may be substituted for Ed. 2. Students who take N. Ed. 2 will not be permitted to register for Ed. 2, or vice versa.

N. Ed. 5, 6. Teaching of Nursing Arts, I and II (3, 3)—(Offered in Baltimore.)

This is the basic course in principles of teaching as applied to the field of nursing arts. It is a course which is roughly parallel to the general course Ed. 145.

For Advanced Undergraduates and Graduates

N. Ed. 112. School of Nursing Finance and Administration (3)—(Offered in Baltimore.)

Sources of financial support for schools of nursing, budgeting, internal school accounting, purchase of supplies and equipment, and other selected problems of financing and administering schools of nursing.

N. Ed. 115, 116. Ward Management and Clinical Teaching (2, 2)—(Offered in Baltimore.)

This course covers the administrative phase of a hospital unit or ward, especially the assigning of duties according to the level of ability of the worker. Emphasis is placed upon hospital economics and the budgeting

of supplies. A program for clinical bedside teaching is stressed through the entire course.

N. Ed. 190. Principles of Pediatric Nursing (3)—(Offered in Baltimore.)

Principles of nursing children with emphasis upon the direction of growth and development of children under conditions where nursing care is required.

PHYSICAL EDUCATION, HEALTH AND RECREATION

A. Physical Education

P. E. courses open only to men are given odd numbers.

P. E. courses open only to women have even numbers.

P. E. courses ending in zero are open to both men and women.

P. E. 10, 20. Basic Body Controls (1, 1)—Three hours a week.

This is designed to acquaint the student with the fundamental principles and techniques of body movement and to provide for practical application in sports, rhythmic and gymnastic activities.

P. E. 30. Introduction to Physical Education, Health and Recreation (3)—First and second semesters.

Orientation course in the professional fields.

P. E. 52, 54. Dance Techniques (1, 1)—Three hours a week.

A basic course which includes movement techniques of modern dance and analysis of form and composition.

P. E. 56, 58. Dance Techniques (1, 1)—Three hours a week.

A continuation of P. E. 52, 54. More advanced movements of the modern techniques are studied. Students are given the opportunity to create and participate in simple group dances. Theory in teaching methods.

P. E. 60. Advanced Gymnastics (2)—Second semester. Four laboratory hours a week.

Practice and theory in gymnastics, pyramids, trampoline, springboard, and exhibition activities appropriate for secondary school pupils.

P. E. 61, 63. Elementary Techniques of Sports and Gymnastics (2, 2)—Six hours a week.

Progressive techniques and practice of seasonal sports and games, stunts and introductory skills of gymnastic exercises.

P. E. 62, 64. Elementary Techniques of Sports and Gymnastics (2, 2)—Six hours a week.

Progressive techniques and practice of seasonal sports, stunts, tumbling, self-testing activities, and gymnastic exercises.

P. E. 65, 67. Intermediate Techniques of Sports and Gymnastics (2, 2)—Six hours a week.

Techniques and practice of sports and gymnastics.

P. E. 66, 68. Sports, Folk Dance and Recreational Activities (2, 2)—Six hours a week.

Techniques of selected sports, experience in folk and square dance, and recreational activities.

P. E. 70. Advanced Modern Dance (2)—Second semester. Four laboratory periods a week. Prerequisites, P. E. 52, 54, 56, 58, or permission of instructor.

Advanced techniques and practice in teaching dance.

For Advanced Undergraduates and Graduates

P. E. 100. Kinesiology (3)—First and second semesters.

A study and analysis of human motion conforming to the laws of mechanics and principles of physiology and anatomy.

P. E. 101, 103. Organization and Officiating in Intramurals (2, 2)—Six hours a week.

Organization, administration, and promotion of intramurals at various school levels. Types of tournaments, units of competition, handling of student leader personnel, etc.

P. E. 112. History of Dance (3)—First semester. Prerequisites, P. E. 52, 54, 56, 58, or permission of the instructor.

Designed to give an overview of the development of dance from primitive to modern times. Students have experience in planning dances for specific historic periods.

P. E. 113, 115. Methods and Materials for Secondary Schools I (2, 2)—Two lectures and two laboratories a week.

Theory and practice; class organization, analysis, and teaching techniques of sports, gymnastics, self-testing activities, and rhythms for Junior and Senior High School programs.

P. E. 114, 116. Methods and Materials for Secondary Schools II (2, 2)—Two lecture and two laboratory hours a week.

Theory and practice; class organization, analysis, and teaching techniques of sports, gymnastics, self-testing activities, and rhythms for Junior and Senior High School programs.

P. E. 123, 125. Coaching Athletics (3, 3)—Two lecture and two laboratory hours a week.

Methods of coaching the various competitive sports commonly found in high school and college programs.

P. E. 124, 126. *Methods and Materials in Team Sports (2, 2)*—Four laboratory hours a week. Prerequisites, P. E. 62, 64, 66, 68.

Theory in coaching and officiating sports for women. Opportunity for National Officials' Ratings.

P. E. 140. *Therapeutics (3)*—First and second semesters. Prerequisite, P. E. 100.

A study of common structural abnormalities, corrective (adaptive) exercises, and massage. Causes, prevention and correction of postural defects. Testing methods. Theory and practice.

P. E. 150. *History and Philosophy of Physical Education (2)*—Second semester.

A study of the origins and derivations of modern physical education and the implications of the modern program for human welfare.

P. E. 170. *Principles of Physical Education (3)*—First and second semesters.

An integrative resume of the basic and specialized sciences pertinent to this field and their application in developing the modern physical education curriculum.

P. E. 180. *Measurement in Physical Education and Health (3)*—First and second semesters. Two lecture and two laboratory hours a week. The application of measurement to physical and health education.

P. E. 181. *Training and Conditioning (3)*—Second semester. Two lecture and two laboratory hours a week.

The training and physical conditioning of athletes. Treatment of athletic injuries by taping, massage, hydro-therapy, physical therapy, and electro-therapy. Remedial and conditioning exercises. Theory and practice.

P. E. 190. *Administration and Supervision of Physical Education, Health, and Recreation (3)*—First and second semesters.

The application of the principles of administration and supervision to physical education, health, and recreation.

For Graduates

P. E. 200. *Departmental Seminar (1-2)*—First and second semesters and summer.

Each candidate for the Master's Degree will present to the group, including departmental and invited authorities, a mimeographed outline of his thesis topic; a verbally delivered digest of the main thesis problem, sub-problems and the tentative solutions. This must be presented, and defended as to criticism in a manner satisfactory to the fellow students, faculty and/or authorities present. (Gloss and Deach.)

P. E. 201. Foundations in Physical Education, Health, and Recreation (3)—First and second semesters.

An overall view of the total fields with their inter-relations and places in education. (Deach and Field.)

P. E. 203. Supervisory Techniques in Physical Education, Health, and Recreation (3)—First and second semesters and alternate summers.

Principles and practices of supervision applied to the special fields indicated. Includes evaluation of facilities, program, personnel, and processes, using either survey or guidance techniques. (Hutto.)

P. E. 205. Administration of Athletics (2)—First and second semesters and summer.

Problems and procedures in the administration of school and college athletic competition, the installation and maintenance of indoor and outdoor athletic equipment, special problems of survey, legislation, property acquisition, finances, inventories, and the selection of personnel. (Burnett.)

P. E. 210. Comparative Problems in Physical Education (2)—First and second semesters.

A comparative international survey of the present-day and possible future programs of physical education, health and recreation. (Gloss.)

P. E. 230. Contemporary Physical Education (3)—First and second semesters and alternate summers.

The present-day status and possible future developments of community, state, federal (including military), physical fitness, and physical education programs. (Gloss.)

P. E. 250. Survey in the Area of Physical Education, Health, and Recreation (6)—First and second semesters and summer.

A library survey course, covering the total areas of physical education, health, and recreation, plus intensive research on one specific limited problem of which a digest, including a bibliography, is to be submitted. (Gloss.)

P. E. 260. Research (1-6)—First and second semesters and summers.

For advanced students capable of doing individual research on some topic other than the Thesis (Ed. 289) or the digest chosen in P.E. 250. Approval of the instructor is required. (Gloss and Burnett.)

B. Health Education

Hea. 40. Personal and Community Hygiene (3)—First and second semesters.

A study of personal and community hygiene for major students. Emphasis on causative factors of various diseases, means of transmission, and prevention.

Hea. 50. First Aid and Safety (2)—First and second semesters.

Standard American Red Cross course in first aid; safety in the home school and community.

Hea. 60. Advanced First Aid (2)—First and second semesters.

Opportunity to secure Red Cross advanced and instructor's certificate.

Hea. 70. Safety Education (3)—First and second semesters.

A study of the causes of accidents and methods of prevention, including principles of traffic and industrial safety.

For Advanced Undergraduates and Graduates

Hea. 110. Health Service and Supervision (3)—First and second semesters.

The supervision of health inspection and physical examinations of students, including the sanitary inspection of the school plant.

Hea. 112. Home Nursing (2)—First semester.

A study of the use of household remedies and the care of house patients, bed making, preparation of invalid's food, use of thermometer, and care before the physician arrives.

Hea. 114. Health Education for Elementary Schools (2)—First and second semesters.

Materials and methods in health education for the classroom teacher.

Hea. 120. Teaching Health (2)—First and second semesters. Prerequisite, Hea. 40 or equivalent.

A study of materials and methods in health education. Planning the health education curriculum.

Hea. 130. Organization and Administration of Health Education (3)—First and second semesters.

The planning of graded school curriculum and the presentation of courses of study in hygiene to the classroom teacher.

Hea. 160. Problems in School Health Education (4-6)—Arranged.

A workshop type course for experienced teachers, administrators, nurses and other active health personnel dealing with the practical problem of educating children in healthful living.

For Graduates

Hea. 220. Principles and Practices of Health Education (3)—First and second semesters and alternate summers.

Health education and health in public schools and colleges as supported by endowed funds or by public taxation.

Hea. 240. Advancements in Modern Health (3)—First and second semesters and summer.

Latest knowledge of the fundamental principles involved in personal, community, state and national health; functions and relationships of the various health agencies cooperating with the educational faculties and their contributions to health; present status of preventive medicine and sanitation.

C. Recreation

Rec. 30. History and Introduction to Recreation (2)—First and second semesters.

The beginnings and expansion of community recreation as fostered by individuals and organizations. Emphasis is placed on history, aims, leadership, areas, facilities, and programs.

For Advanced Undergraduates and Graduates

Rec. 100. Co-recreational Games and Programs (2)—First and second semesters. Four laboratory hours a week.

Activities for social recreation in playgrounds, industries, camps, churches, and gymnasiums.

Rec. 102. Recreational Games for the Elementary School (2)—First semester.

Materials and methods, theory and practice in teaching games.

Rec. 110. Nature Lore (1-3)—Second semester.

An evening course and six Saturdays and Sundays during April and May; given in Washington. The conducting of nature trips for study and appreciation of plant, insect and animal life, and astronomy.

Rec. 120. Camp Administration and Leadership (3)—First and second semesters.

The observation and practice in the conducting of summer camps for children and adults. The management of boating and overnight trips, including the study of woodcraft and outdoor cookery.

Rec. 130. Principles and Practice of Recreation (3)—First and second semesters.

Theories of recreation and methods of conducting individual and group recreation put into practice with college students.

Rec. 140. Observation and Service in Recreation (5)—First and second semesters.

Observation of recreation centers, city playgrounds, community and night centers. Leadership practice in these areas and written reports. Students who desire to be certified as teachers must plan their courses to meet College of Education requirements in practice teaching.

Rec. 160. Recreational Golf (1)—Second semester.

The game treated as a social pastime with practice in the etiquette and psychology of team play.

Rec. 170. Organization and Administration of Recreation (3)—First and second semesters.

A consideration of the management and the personnel required to conduct recreation activity programs by municipal, industrial, school, club, and social agencies.

For Graduates**Rec. 210. Philosophy of Recreation (2)**—First and second semesters and alternate summers.

The possible implications for social betterment by proper use of leisure time in a democratic civilization which is constantly increasing the free time of the common man.

Rec. 220. Contemporary Recreation (3)—First and second semesters and alternate summers.

The present-day status and the possible future developments of private, public, and industrial recreation.

SCIENCE EDUCATION**Sci. Ed. 1. General Science for the Elementary School**—Summer.

Sections A-1 and A-2: For Primary Grades (2, 2).

Sections B-1 and B-2: For Upper Elementary Grades (2, 2).

This course is planned to meet the needs of the elementary school teacher. It will provide background material in selected phases of those sciences which contribute to elementary school work. An interpretation of materials of the local environment with reference to enrichment of the science program will receive attention.

Students may receive credit for both Sections A-1 and A-2 or B-1 and B-2. *Students should not enroll for both A and B Sections.* Laboratory fee, \$1.00.

Sci. Ed. 2. Activity Materials for Science in the Elementary School (2)—Summer.

A laboratory course planned to provide grade teachers with the opportunity for becoming acquainted with experiments and preparing materials which are of practical value in their science teaching.

GLENN L. MARTIN
College of
**ENGINEERING and AERONAUTICAL
SCIENCES**

STAFF

_____, Director of Engineering Education and Research.

S. Sidney Steinberg, B.E., C.E.,

Dean in Charge of Undergraduate Students

REDFIELD W. ALLEN, B.S., Instructor in Engineering Drawing.

RUSSELL B. ALLEN, B.S., Professor of Civil Engineering.

PAUL D. ARTHUR, M.S., Instructor in Mechanical Engineering.

EDWARD S. BARBER, B.S., Associate Professor of Civil Engineering.

JACK L. BAXTER, B.S., Instructor in Electrical Engineering.

WALTER R. BEAM, B.S., Instructor in Electrical Engineering.

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of the Department.

JOHN W. JACKSON, M.S., M.E., Associate Professor of Mechanical Engineering.

AUDLEY B. LEAMAN, B.S., Instructor in Mechanical Engineering.

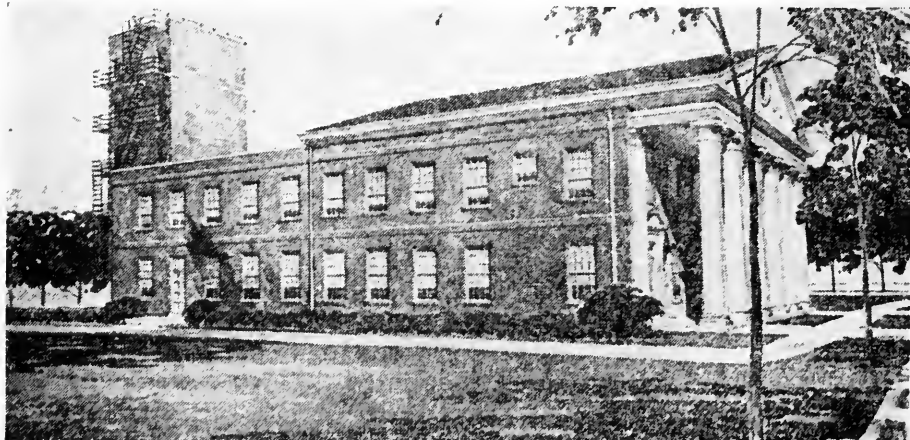
ROBERT F. LUCE, B.S., Instructor in Civil Engineering.

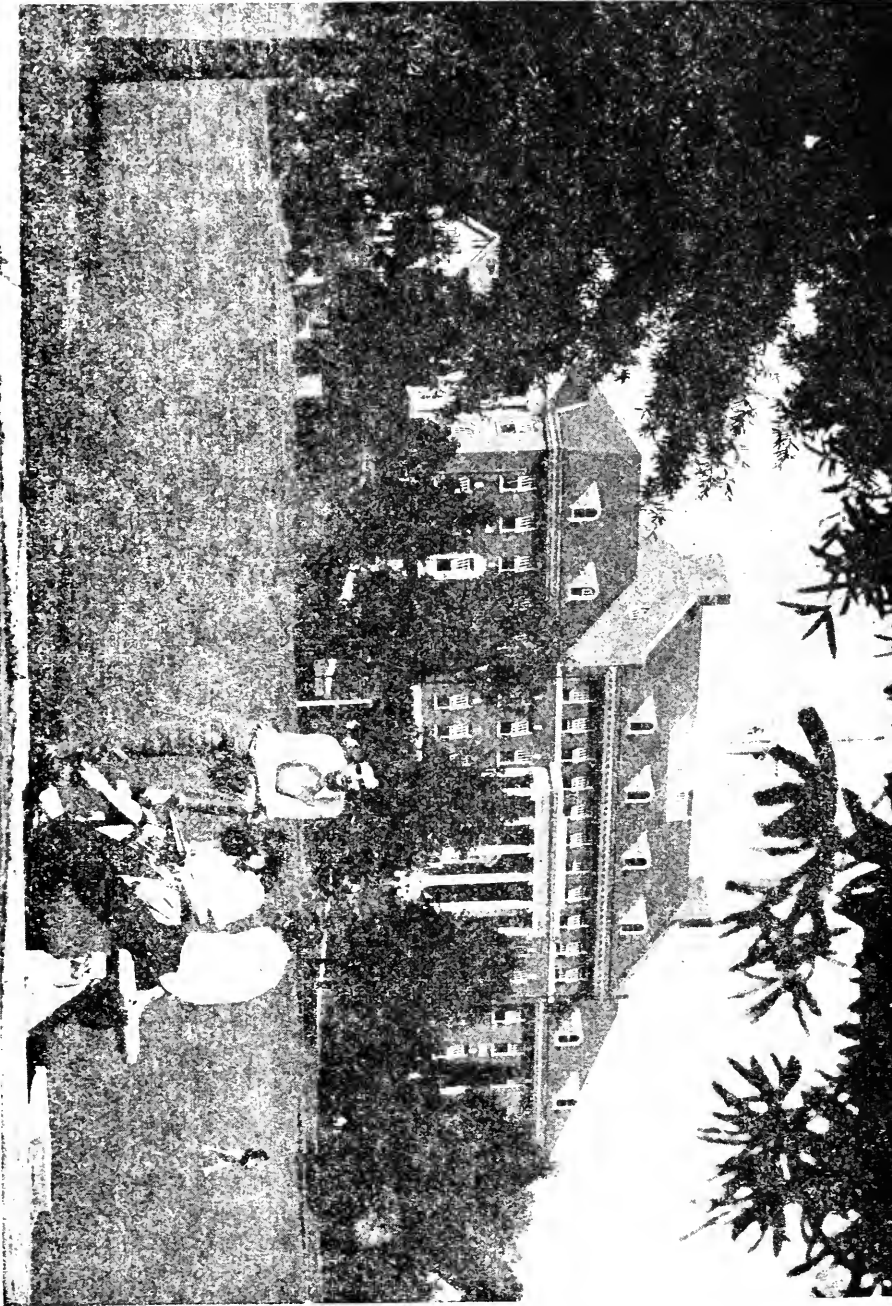
HAROLD R. MARTIN, M.S., Associate Professor of Mechanical Engineering.

LOUIS E. OTTS, JR., M.S., Associate Professor of Civil Engineering.

H. PHILLIP PICKERING, B.S., Assistant Professor of Civil Engineering.
 HARRY W. PIPER, B.Arch.E., Instructor in Civil Engineering.
 HENRY W. PRICE, B.S., Instructor in Electrical Engineering.
 WALTON R. READ, M.S., Assistant Professor of Mechanical Engineering.
 WILLIAM M. REDD, JR., B.S., Instructor in Civil Engineering.
 HENRY R. REED, Ph.D., Professor of Electrical Engineering.
 ROBERT M. RIVELLO, M.S., Instructor in Mechanical Engineering.
 AARON W. SHERWOOD, M.S., Research Professor of Aeronautics; Manager of Wind Tunnel.
 CHARLES A. SHREEVE, JR., M.S., Associate Professor of Mechanical Engineering.
 THOMAS C. SLINGLUFF, B.S., Assistant Professor of Mechanical Engineering.
 ERIC H. SMALL, M.E.E., Associate Professor of Electrical Engineering.
 JOSEPH S. SMATKO, Ph.D., Assistant Professor of Chemical Engineering.
 S. SIDNEY STEINBERG, B.E., C.E., Professor of Civil Engineering and Chairman of the Department; Dean in Charge of Undergraduate Students.
 JOHN W. STUNTZ, B.S., Lecturer on Applied Electronics.
 EMILE H. SUNIER, B.S., Instructor in Civil Engineering.
 PETER F. VIAL, B.S., Instructor in Mechanical Engineering.
 T. C. GORDON WAGNER, Ph.D., Associate Professor of Electrical Engineering.
 STANTON WALKER, B.S., Lecturer on Engineering Materials.
 ROBERT K. WARNER, B.S., Instructor in Mechanical Engineering.
 JOSEPH WEBER, B.S., Professor of Electrical Engineering.
 PRESLEY A. WEDDING, B.S., Assistant Professor of Civil Engineering.
 THOMAS T. WITKOWSKI, M.S., Assistant Professor of Electrical Engineering.
 JOHN E. YOUNGER, Ph.D., Professor of Mechanical Engineering and Chairman of the Department.

The Fire Service Extension Building





COLLEGE OF ENGINEERING BUILDING

(A newer, larger building is now being constructed)

GLENN L. MARTIN
COLLEGE OF ENGINEERING
AND AERONAUTICAL SCIENCES

_____, Director of Engineering Education and Research.
S. Sidney Steinberg, B.E., C.E.,
Dean in Charge of Undergraduate Students

The primary purpose of the College of Engineering is to train young men to practice the profession of Engineering. It endeavors at the same time to equip them for their duties as citizens and for careers in public service and in industry.

In training professional engineers it is necessary that great emphasis be placed on the fundamentals of mathematics, science and engineering so as to establish a broad professional base. Experience has also shown the value of a coordinated group of humanistic-social studies for engineering students since their later professional activities are so closely identified with the public. It is well recognized that an engineering training affords an efficient preparation for many callings in public and private life outside the engineering profession.

The new buildings just completed for the College of Engineering were made possible through the interest of Mr. Glenn L. Martin, President of the Glenn L. Martin Company of Baltimore, which resulted in two large gifts from the Company to the University, to which have been added funds made available by the Legislature of Maryland. The new units consist of four structures, namely, General Engineering building, an Engineering Laboratories building, a Chemical Engineering building, and a Wind Tunnel building.

This increase in facilities has made possible an expansion of the work in each department and the establishment in the College of Engineering of an Institute for Advanced Technological Research. This Institute will carry on full-time research in connection with an organization known as the State Institute for Industrial Research, authorized by the Maryland Legislature to be under the direction of the Board of Regents of the University, and also to carry on studies in the various departments leading to graduate degrees.

The length of the normal curriculum in the College of Engineering is four years and leads to the bachelor's degree. In the case of most students these four years give the engineering graduate the basic and fundamental knowledge necessary to enter upon the practice of the profession. Engineering students with superior scholastic records are advised to supplement their undergraduate programs by at least one year of graduate study leading to the master's degree. All the engineering departments encourage graduate work leading to the doctor's degree, and the Department of

Chemical Engineering has already awarded Ph.D. degrees to a number of candidates. Graduate engineers desiring to enter research and development work should endeavor to qualify for the doctorate. Graduate programs will be arranged upon application to the chairman of the engineering department concerned.

In order to give the new student time to choose the branch of engineering for which he is best adapted, the freshman year of the several curriculums is the same. Lectures and conferences are used to guide the student in making a proper choice. The courses differ only slightly in the sophomore year, but in the junior and senior years the students are directed definitely along professional lines.

Admission Requirements

The requirements for admission to the College of Engineering are, in general, the same as elsewhere described for admission to the undergraduate departments of the University, except as to the requirements in mathematics.

It is possible, however, for high school graduates having the requisite number of entrance units to enter the College of Engineering without the unit of advanced algebra, or the one-half unit of solid geometry. The program for such students would be as follows: during the first semester, five hours a week would be devoted to making up advanced algebra and solid geometry; in the second semester, mathematics of the first semester would be scheduled, and the second semester mathematics would be taken in the third semester.

Bachelor Degrees in Engineering

Courses leading to the degree of Bachelor of Science are offered in aeronautical, chemical, civil, electrical, and mechanical engineering.

Master of Science in Engineering

Candidates for the degree of Master of Science in Engineering are accepted in accordance with the procedure and requirements of the Graduate School. See Graduate School Catalog.

Professional Degrees in Engineering

The degrees of Aeronautical Engineer, Chemical Engineer, Civil Engineer, Electrical Engineer, and Mechanical Engineer will be granted only to graduates of the University who have obtained a bachelor's degree in engineering. The applicant must satisfy the following conditions:

1. He shall have engaged successfully in acceptable engineering work for not less than four years after graduation.
2. He must be considered eligible by a committee composed of the Dean of the College of Engineering and the heads of the Departments of Aeronautical, Chemical, Civil, Electrical, and Mechanical Engineering.
3. His registration for a degree must be approved at least twelve months prior to the date on which the degree is to be conferred. He shall present

with his application a complete report of his engineering experience and an outline of his proposed thesis.

4. He shall present a satisfactory thesis on an approved subject.

Equipment

The Engineering buildings are provided with lecture-rooms, recitation-rooms, drafting-rooms, laboratories, and shops for various phases of engineering work.

Drafting-Rooms. The drafting-rooms are fully equipped for practical work. The engineering student must provide himself with an approved drawing outfit, supplies, and books.

Chemical Engineering Laboratories. Beginning in 1949-50 instruction and research in Chemical Engineering will be housed in a new building designed for this purpose. It contains lecture rooms, library, laboratories, shops, storerooms, dark rooms and offices ample in size and equipment to accommodate the full range of chemical engineering studies, from the elementary chemical and physical reactions underlying process developments to the construction and operation of pilot plants and the design of full scale equipment, with provisions for specialized work in options such as electrochemical engineering, fuel engineering and metallurgy. Laboratories are maintained for (1) General Testing and Control; (2) Unit Operations; (3) Electromechanical Engineering; (4) Metallurgy; (5) Cooperative Research; (6) Graduate Research.

General Testing and Control Laboratory. In this laboratory there is available complete equipment for the chemical and physical testing of water, gases, coal, petroleum, and their by-products; and for general industrial chemicals, both inorganic and organic.

Unit Operations Laboratory. This laboratory contains equipment for the study of fluid flow, heat flow, drying, filtration, distillation, evaporation, crushing, grinding, combustion, gas absorption, extraction, and centrifuging. Organic process equipment includes an autoclave, nitrator, reducer, and mixing kettle. For the study of fluid flow a permanent hydraulic assembly is available, and this includes flow meters of most types. A Chemical Control Laboratory is maintained in conjunction with the Unit Operations Laboratory.

In the laboratory there is a large column still with a kettle capacity of 100 gallons, equipped for the measurement of temperature and pressure, sampling devices, condensers, and vacuum receivers. This still is so designed that it can be used either as a batch type unit, continuous feed type, direct pot still, steam still, or as a vacuum still. Studies in evaporation can be made on a double effect evaporator, one unit of which is equipped with a horizontal tube bundle and the other with a vertical tube bundle. This evaporator is equipped with vacuum and pressure gauges, stirrer, wet vacuum pump, condensate pump, and salt filter. Gas absorp-

tion equipment includes a blower and a stoneware column packed with different types of packings in respective sections so that comparative studies may be made. The organic process equipment is all self-driven and designed to afford flexibility in use. Filtration equipment includes plate and frame, Sweetland and Sparkler types. Combustion equipment available consists of an industrial carburetor, pot furnace, premix gas fired furnace and the usual gas analysis equipment. For grinding there is a comminuting machine, jaw crusher, a disc crusher and ball mills. Mechanical shakers and standard sieve are available for particle size separation. Centrifugation studies may be made on a continuous super centrifuge, Tolhurst basket type or centrifugal dryer. Shop facilities include a milling machine, lathe, drill presses, grinder, welding equipment, and other tools necessary for unit operation and research studies. The University has received war surplus equipment which, when placed in operation, will greatly expand these facilities.

Electrochemical Engineering Laboratory. This laboratory contains apparatus simulating industrial electrochemical engineering equipment, as well as small laboratory size units to illustrate principles of operation. Studies conducted in this laboratory relate to electric furnace operations, metal winning and refining, electroplating, corrosion, electrochemical preparations, chlorine and caustic soda manufacture, instrumentation, and related operations and processes.

The laboratory contains one large capacity dry rectifier, several small dry rectifiers, several 300 ampere motor generator sets, 75 KVA variable A.C. supply for furnace operations and numerous storage batteries as power sources. The equipment includes a small (25KVA) silicon carbide furnace, aluminum electrolytic cell, small arc furnace for making ferro-silicon, ferro-chromium, aluminum, bronze and other alloys, numerous electrolytic cells for electroplating, copper, lead, nickel, chromium, zinc, cadmium, brass, silver, gold, rhodium, and other metals. Flexible arrangements are maintained for the production electrolytically of materials such as iodoform, white lead, cuprous oxide, azobenzene, dyes, nitrites, hydroxylamine, chlorine, caustic soda and other chemicals. Corrosion testing equipment is also on hand. Arrangements are flexible enough so that most industrial electrochemical operations can be reproduced on a moderate scale.

Cooperative and Graduate Research Laboratories. These laboratories are arranged to permit the installation of such special equipment as the particular problems under consideration may require. Effort is made to maintain cooperation with the industries of Maryland and the Chemical Engineering activities of the State and Federal governments; for such work important advantages accrue because of the location of the Eastern Experiment Station of the United States Bureau of Mines on the University campus.

Electrical Machinery Laboratory. This laboratory, with a floor space of 5,760 square feet, is divided into four working areas, each area to be

serviced by a modern distribution switchboard and auxiliary panels. The distribution switchboard also provides interconnection between each working area as well as to the various other laboratories situated throughout the electrical engineering department. Each working area is provided with an educational DC-AC motor generator and a variety of modern motors, generators, transformers, and other electrical devices of such size and design as to give typical performance characteristics. An overhead crane is available to facilitate the moving and rearrangement of the various machines.

Electric power is supplied to the laboratory by a three-unit motor-generator set consisting of a 150 HP synchronous motor driving a 50 KW, 125/250 volt direct current generator, and a 62.5 KVA, 80 per cent power factor, 3 phase, 60 cycle generator. This latter machine is wired to supply both 120 volts and 240 volts simultaneously. A modern switchgear will provide well regulated voltage from each generator.

Adjoining the laboratory there is an instrument and small-equipment room provided with a large assortment of measuring instruments essential to practical electrical testing, namely, ammeters, voltmeters, wattmeters, watt-hour meters, frequency meters, strobotacs, tachometers, wheatstone bridges, impedance bridges, oscillographs, and special rheostats.

A well appointed shop is available with modern metal and wood turning tools for the repair of equipment, the building of experimental devices, and the general repair of all laboratory facilities. Another adjoining room provides lecture room facilities, computation tables and reference material.

Industrial Electronics Laboratory. A floor area of 1,900 square feet adjacent to the machinery laboratory and connected with it by way of a two-ton monorail crane is called the Industrial Electronics Laboratory.

This laboratory is equipped with apparatus and controls similar to those used in industry in obtaining better products in greater quantities, by means of electronic devices.

The experimental apparatus consists of several amplidyne, an electronic welder, a high frequency heating unit, several types of electronic motor controllers, voltage regulators, photo-electric counters, thyatron rectifiers, servo-control systems, and an X-ray installation.

The laboratory is energized from a distribution center similar to the system used in the adjacent machinery laboratory and in addition, three-phase ignitron rectifiers and high voltage power supplies are provided.

The instrument room and shop which serve the machinery laboratory also serve the Industrial Electronics Laboratory.

Sophomore Laboratory. A balcony overlooking the machinery laboratory is equipped with five work stations at which basic electric and magnetic measurements are performed.

Equipment is provided for fundamental measurements of current, voltage, power, and resistance. Ballistic galvanometers, long solenoids, flux meters,

and traction permeameters are employed in measuring magnetic quantities. Triode characteristics and basic non-linear circuit concepts are studied experimentally in this laboratory.

Photometry and Oscillographic Laboratory. A laboratory, 16 by 50 feet, provided with a dark room is available for photometric and oscillographic measurements. The photometry apparatus consists of a bar photometer and four types of portable photometers and light meters. Typical lighting installations are available for experimental study.

Electromagnetic oscillographs are available for studying transient and steady-state time variations of electric currents and voltages. The dark room facilities permit on-the-spot development of the photographic film.

Electronics and Radio Engineering Laboratories. A room 25 feet in width by 60 feet in length is equipped with eight work stations, four of which are specifically outfitted for basic electronics experiments and four specifically for radio engineering experiments.

The electronics equipment consists of various bread-board layouts, signal generators, cathode-ray oscilloscopes, vacuum tube voltmeters, frequency meters, and a wide range of indicating instruments. With this apparatus, pentode and thyatron characteristics are studied experimentally and basic electronic measurements are performed. The performance characteristics of amplifiers, oscillators, and regulated power supplies are also investigated in this section of the laboratory.

The radio equipment consists of various breadboard layouts, including mixers, discriminators, oscillators, IF stages, inverters, class C amplifiers, and push-pull audio stages. Complete radio receivers and transmitters are available both in commercial form and in demonstration panel form for experimental study.

Adjacent to this laboratory is a combined instrument room and radio repair shop.

Ultra High Frequency Laboratory. A floor area of 1,000 square feet is dedicated to experimentation and measurements in the frequency spectrum ranging from 200 to 10,000 megacycles per second.

Signal generators covering this frequency range as well as a wide variety of magnetron, klystron, and light-house tube oscillators are available.

In the lower frequency ranges, parallel-wire transmission lines are employed to illustrate single and double stubbing theory. The transmission line is also used as an impedance measuring device.

In the higher frequency ranges, wave guides, slotted sections, sectoral horns, and parabolic antennas are employed to demonstrate microwave techniques. Crystal detectors and bolometers are provided for signal detection and power measurements respectively.

FM and Television Laboratory. Space is provided on the upper floor of the main engineering building for experimental study of frequency-

modulated and television signals. Receiving and transmitting apparatus are available for this purpose. Owing to the location of the laboratory, antennas may be installed readily and connected from the transmitter to the roof of the building, where a 50-by-50-foot unobstructed area may be used for antenna pattern measurements.

Mechanical Engineering Laboratories. These laboratories are equipped for research and practice in thermodynamics, heat transmission, fuels and lubricants, steam power, internal combustion engines, refrigeration, air conditioning and heating and ventilation.

The apparatus in the steam power and heat transfer laboratory consists of steam engines equipped with Prony brakes, two-stage steam driven air compressor, mechanical indicators, planimeters, pumps, gauges and their testing equipment, feed water heaters, steam condensers, injectors and ejectors, and a steam turbine generator set.

The fuels and lubricants equipment consists of bomb and gas calorimeters, viscosimeter, octane and octane rating engines, hydrometers, chemical balances, drying ovens, and exhaust gas analyzing equipment.

For internal combustion engine laboratory practice and research there are available: Waukesha Diesel engine research unit with electric dynamometer, National Advisory Committee for Aeronautics variable compression ratio research engine, single and multi-cylinder gasoline engines, radial aircraft engine, R.C.A. piezo-electric high speed engine indicator, vibration measuring equipment, and exhaust pyrometers.

A refrigeration and air conditioning unit, fans, flowmeters, and two heating and ventilation units are also available.

Metallography Laboratory. This laboratory is equipped for the physical study of metals. Research and practice can be carried out in this laboratory in the following fields: crystallography and alloy systems, heat treatment and strength of materials, and macro and micro examination of metals. Included also are controlled heat treating and melting furnaces, bakelite mold press, polishing wheels, etching equipment, microscopes, photographic equipment, Rockwell hardness tester, Jominy and quench testing equipment, creep testing machine, cutting off wheels, thermocouples and pyrometers, and other special instruments.

The laboratory has a Bausch and Lomb I L S metalloscope for producing photomicrographs up to 2,000 magnifications.

Aeronautical Laboratory. The present aeronautical laboratory is equipped for practice and research in engines, metal aircraft construction, structural tests, vibration and noise, and aerodynamics.

A sheet metal shop equipped to construct components of aircraft structures in aluminum alloy and steel is available. This shop includes such equipment as automatic air riveting hammer, planishing machines, squaring shears, rolls, brake, heat treating furnace, etc. A small machine shop

is also available for students in constructing research apparatus. Variable speed motors are available for experiments in vibration and noise.

The laboratory also includes a research spot welding machine, a sixty-thousand-pound Baldwin-Southwark aircraft universal testing machine, Tuckerman gauges, oscillographs with accessories, and a Timby hydraulic jack system for static testing.

Hydraulics Laboratory. The equipment consists of four electrically driven pumps together capable of circulating a maximum of 4,000 gallons of water per minute, a standpipe 5 feet in diameter and 60 feet high which can be used as a constant level tank at three different heads; 150 foot head tank, 300 foot head tank, 3 foot by 4 foot by 15 foot metal weir tank, 3 foot by 4 foot by 25 foot glass sided flume for weir and model experiments, Pelton water wheel with glass sides for direct observation, Rodney-Hunt reaction turbine, measuring tanks, weirs, nozzles, venturi meters, other meters, gauges, and other small apparatus necessary for the study of the flow characteristics of water.

Materials Testing Laboratory. Apparatus and equipment are provided for making standard tests on various construction materials, such as sand, gravel, stone, steel, concrete, lumber, brick, bituminous materials and road mixes.

Equipment includes a 400,000-pound universal hydraulic testing machine, a 60,000-pound universal hydraulic testing machine, three 100,000-pound screw power universal testing machines, torsion testing machine, impact testing machine, weather-o-meter, Rockwell, Brinnell and Shore hardness testers, abrasion testing machine, rattler, constant temperature chamber, moist room and other facilities for mixing, curing and testing concretes and mortars, as well as extensometer and micrometer gauges, electrical strain gauges and other special devices for ascertaining the elastic properties of various materials.

Sanitary Laboratory. The laboratory is designed to provide facilities for instruction and research in water and sewage problems.

The apparatus and equipment required to make the standard chemical and bacteriological analyses of water and sewage are available.

Ample space and equipment for model work are provided in this laboratory and since it is adjacent to the hydraulics laboratory, access to its facilities for additional studies are available.

Soils Mechanics Laboratory. The laboratory is designed for instruction and research into the properties of soil and their structural applications. The laboratory is equipped for the performance of all the usual soil tests, sieve and hydrometer analysis. Atterberg limits, compaction, permeability, capillarity, consolidation and strength.

The strength testing equipment includes direct shear and triaxial devices to be loaded statically or by variable speed motors and a universal testing machine with a 240-pound range and automatic recorder. A repetitive

loading device is available to simulate fatigue or compaction from traffic loads. Compaction equipment includes an automatic tamper and a variable frequency vibration table.

Also available are field sampling and resistivity exploration equipment, California bearing ratio apparatus for field and laboratory, apparatus for chemical and microscopic studies and motorized pulverization and mixing equipment.

Research Foundation. The National Sand and Gravel Association and the National Ready Mixed Concrete Association have, by arrangement with the College of Engineering, established their joint testing and research laboratory at the University. The purpose of the Research Foundation thus organized is to make available to the Association additional facilities for its investigational work, and to provide for the College of Engineering additional facilities and opportunities for increasing the scope of its engineering research.

Machine Shop. The machine shop is equipped with various types of lathes, planers, milling machines, drill presses, shaper, midget mill, and precision boring head. Equipment is available for gas and electric arc welding.

The shop equipment not only furnishes practice, drill, and instruction for students, but makes possible the complete production of special apparatus for conducting experimental and research work in engineering.

Surveying Equipment. Surveying equipment for plane, topographic, and geodetic surveying is provided properly to equip several field parties. A wide variety of surveying instruments is provided, including domestic as well as foreign makes, and stereoscopic instruments are available for the interpretation and use of aerial photographs.

Special Models and Specimens. A number of models illustrating various types of highway construction and highway bridges are available.

A wide variety of specimens of the more common minerals and rocks has been collected from various sections of the country, particularly from Maryland.

Engineering Library. In addition to the general University Library an Engineering Reading Room in the Engineering Building receives the standard engineering magazines and technical journals and maintains a reference library of the standard engineering works and current technical literature. Also special reference books and catalogs for design courses are provided in the design rooms of the various departments.

The Davis Library of Highway Engineering and Transport, founded by Dr. Charles H. Davis, President of the National Highways Association, is part of the Library of the College of Engineering. This library covers all phases of highway engineering, highway transportation, and highway traffic control.

There has also been donated to the College of Engineering the transportation library of the late J. Rowland Bibbins of Washington, D. C. The books and reports in this library deal with urban transportation problems, including railroads, street cars, subways, busses, and city planning.

Curricula

The normal curriculum of each department is outlined on the following pages. Students are expected to attend and take part in the meetings of the student chapters of the technical engineering societies.

Freshman engineering students are given a special course of lectures by practicing engineers covering the work of the several engineering professional fields. The purpose of this course is to assist the freshman in selecting the particular field of engineering for which he is best adapted. The student is required to submit a brief written summary of each lecture. A series of engineering lectures for upper classmen is also provided. These are given by prominent practicing engineers in the various branches of the profession.

Student branches of the following national technical societies are established in the College of Engineering: American Institute of Chemical Engineers, American Society of Civil Engineers, American Institute of Electrical Engineers, and American Society of Mechanical Engineers. The student branches meet regularly for the discussion of topics dealing with the various fields of engineering.

A student in the College of Engineering will be certified as a junior when he shall have passed all the basic technical courses of the Freshman and Sophomore years with an average grade of C or higher.

The proximity of the University to Baltimore and Washington, and to other places where there are large industrial enterprises, offers an excellent opportunity for the engineering student to observe what is being done in his chosen field. An instructor accompanies students on all inspection trips, and students are required to submit a written report of each trip.

The courses listed in the curricula to follow will be found described in detail on the following pages.

BASIC CURRICULUM FOR ALL FRESHMAN STUDENTS

All freshman students are required to take the following curriculum during their first year:

<i>Freshman Year</i>	—Semester—	
	<i>I</i>	<i>II</i>
Eng. 1, 2—Composition and American Literature.....	3	3
Speech 7—Public Speaking .....	....	2
*Math. 14—Plane Trigonometry	2	....
*Math. 15—College Algebra	3	....
Math. 17—Analytic Geometry .....	....	4
Chem. 1, 3—General Chemistry.....	4	4
Dr. 1, 2—Engineering Drawing.....	2	2
Engr. 1—Introduction to Engineering.....	1	....
M. S. 1, 2—Basic R. O. T. C.....	3	3
Physical Activities	1	1
Total	19	19

AERONAUTICAL ENGINEERING

Aeronautical Engineering deals with the design, construction, and maintenance of aircraft and aircraft power plants; aerodynamics and performance of aircraft; structural design and mechanical equipment; and the organization and operation of industrial aircraft plants.

Aeronautical Engineering Curriculum

<i>Sophomore Year</i>	—Semester—	
	<i>I</i>	<i>II</i>
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
Math. 20, 21—Calculus.....	4	4
Phys. 20, 21—General Physics	5	5
Surv. 1—Plane Surveying .....	....	2
Dr. 3—Advanced Engineering Drawing.....	2	....
Shop 1—Machine Shop Practice.....	2	....
Shop 2—Machine Shop Practice.....	....	1
Shop 3—Foundry Practice .....	....	1
M. S. 3, 4—Basic R. O. T. C.....	3	3
Physical Activities	1	1
Total	20	20

* A qualifying test is given during registration to determine whether the student is adequately prepared for Math. 14 and 15. A student failing this test is required to take Math. 1, Introductory Algebra, without credit and is not eligible to take Math. 14 concurrently.

—Semester—

Junior Year

	<i>I</i>	<i>II</i>
Eng. 3, 4—Composition and World Literature; or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
Math. 64—Differential Equations for Engineers.....	3	....
Mech. 2—Statics and Dynamics.....	5	....
Mech. 52—Strength of Materials.....	....	5
M. E. 53—Metallography.....	....	3
M. E. 100—Thermodynamics.....	3	....
Aero. E. 101—Aerodynamics.....	....	3
Aero. E. 103—Airplane Detail Drafting.....	1	....
Aero. E. 104—Airplane Layout Drafting.....	....	1
E. E. 51, 52—Principles of Electrical Engineering.....	4	4
	<hr/>	<hr/>
Total.....	19	19

Senior Year

H. 5, 6—History of American Civilization.....	3	3
Aero. E. 102—Aerodynamics.....	2	....
Aero. E. 105, 106—Airplane Fabrication Shops.....	1	2
Aero. E. 107, 108—Airplane Design.....	4	4
Aero. E. 109, 110—Aircraft Power Plants.....	4	4
Aero. E. 111, 112—Aeronautical Laboratory.....	2	2
Aero. E. 113, 114—Mechanics of Aircraft Structures.....	3	3
	<hr/>	<hr/>
Total.....	19	18

THE WIND TUNNEL



CHEMICAL ENGINEERING

Chemical Engineering deals primarily with the industrial and economic transformation of matter. It seeks to assemble and develop information on chemical operations and processes of importance in modern life and to apply this under executive direction, according to engineering methods, for the attainment of economic objectives. Modern chemical research has contributed so much to industrial and social welfare that the field of the chemical engineer may now be said to cover practically every operation in which any industrial material undergoes a change in its chemical identity.

Chemical Engineering Curriculum

	—Semester—	
	I	II
<i>Sophomore Year</i>		
G. & P. 1—American Government.....	3	....
Math. 20, 21—Calculus	4	4
Phys. 20, 21—General Physics.....	5	5
Chem. 19—Quantitative Chemical Analysis.....	4	....
Ch. E. 10—Water, Fuels and Lubricants.....	....	4
*Surv. 1—Elements of Plane Surveying.....	....	2
or	....	2
Ch. E. 21—Crystallography and Mineralogy.....	....	2
M. S. 3, 4—Basic R. O. T. C.....	3	3
Physical Activities	1	1
Total	20	19
<i>Junior Year</i>		
Eng. 3, 4—Composition and Readings in World Literature.....	....	....
or	3	3
Eng. 5, 6—Composition and Readings in English Literature.....	....	....
Econ. 31, 32—Principles of Economics.....	3	3
Ch. E. 103, f, s.—Elements of Chemical Engineering.....	3	3
Chem. 187, 189—Elements of Physical Chemistry Lectures.....	3	3
Chem. 188, 190—Physical Chemistry Laboratory.....	2	2
*Chem. 35, 37—Elementary Organic Chemistry Lectures.....	....	....
or	2	2
Ch. E. 60, 61—Principles of Metallurgy.....	....	....
Mech. 3, 4—Statics and Dynamics	3	3
Total	19	19

* All Chemical Engineers shall take Surveying 1 and Organic Chemistry 35, 37, except those who complete the entire Metallurgical option comprising Ch. E. 21; Ch. E. 60, 61; Ch. E. 160, 161; Ch. E. 180, 181.

<i>Senior Year</i>	(Semester)	
	I	II
*H. 5, 6—History of American Civilization.....		
or	3	3
Ch. E. 114—Applications of Electrochemistry.....	4	....
**Ch. E. 105, f, s.—Advanced Unit Operations.....		
or	5	5
Ch. E. 180, 181—Unit Operations in Metallurgy.....		
Ch. E. 109 f, s.—Chemical Engineering Thermodynamics.....	2	2
Ch. E. 110—Advanced Chemical Engineering Calculations.....	....	3
Ch. E. 107—Fuels and Their Utilization.....	3	....
Ch. E. 108 f, s.—Chemical Technology.....		
or	2	2
Ch. E. 160, 161—Metallurgical Technology.....		
E. E. 51, 52—Principles of Electrical Engineering.....	4	4
‡Ch. E. 104—Seminar.....	1	1
Total.....	20	20
	or 21	or 21

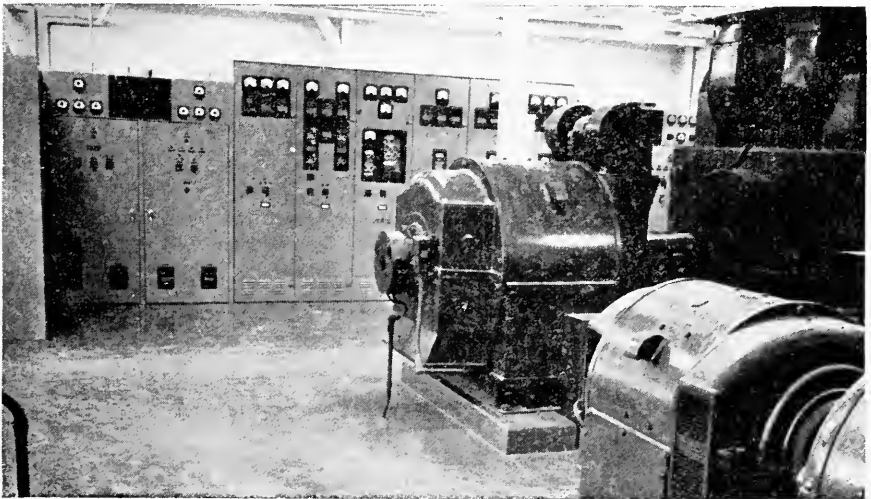
* Students who are to become candidates for graduate degrees requiring foreign language may elect instead a foreign language and secure the American History credit in their graduate program. Students who wish to do graduate work in Electrochemical Engineering may elect Ch. E. 114, "Applications of Electrochemistry," and secure the American History credit in their graduate program.

** Students electing the Metallurgical Option in Chemical Engineering and who complete courses Ch. E. 21; Ch. E. 60, 61; Ch. E. 160-161 may elect Ch. E. 180-181—"Unit Operations in Metallurgy" in place of Ch. E. 105 f, s—Advanced Unit Operations.

‡ Students prepare reports on current programs on Chemical Engineering and participate under supervision of staff member. The content of this course is constantly changing so a student may receive a number of credits by re-registration.

ELECTRICAL EQUIPMENT

A Part of the Control Equipment for the Wind Tunnel



CIVIL ENGINEERING

Civil Engineering deals with the design, construction, and maintenance of highways, railroads, waterways, bridges, buildings, water supply and sewerage systems, harbor improvements, dams, and surveying and mapping.

Civil Engineering Curriculum

Sophomore Year

—Semester—

I II

G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
Math. 20, 21—Calculus	4	4
Phys. 20, 21—General Physics.....	5	5
Dr. 3—Advanced Engineering Drawing.....	2	....
Mech. 1—Statics and Dynamics.....	....	3
Surv. 1, 2—Plane Surveying.....	2	2
M. S. 3, 4—Basic R. O. T. C.....	3	3
Physical Activities	1	1
Total	20	21

Junior Year

Eng. 3, 4—Composition and World Literature; or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
Speech 108—Public Speaking.....	....	2
Math. 16—Spherical Trigonometry	2	....
Geol. 2—Engineering Geology .....	....	2
Mech. 50—Strength of Materials.....	4	....
Mech. 53—Materials of Engineering.....	....	2
C. E. 50—Hydraulics	3	....
C. E. 51—Curves and Earthwork .....	....	3
C. E. 100—Theory of Structures.....	....	4
Surv. 100—Advanced Surveying	4	....
M. E. 50—Principles of Mechanical Engineering.....	....	3
E. E. 50—Fundamentals of Electrical Engineering.....	3	....
Total	19	19

Senior Year

H. 5, 6—History of American Civilization.....	3	3
Econ. 37—Fundamentals of Economics.....	3	....
Engr. 100—Engineering Contracts and Specifications.....	....	2
Eng. 7—Technical Writing .....	....	2
Bact. 55—Lectures in Sanitary Bacteriology.....	2	....
C. E. 101—Soil Mechanics	3	....
C. E. 102—Structural Design.....	6	....
C. E. 103—Concrete Design .....	....	6
C. E. 104—Water Supply	3	....
C. E. 105—Sewerage .....	....	3
C. E. 106—Elements of Highways .....	....	3
Total	20	19

ELECTRICAL ENGINEERING

Electrical Engineering deals with the generation, transmission, and distribution of electrical energy; electrical transportation, communication, illumination, and manufacturing; and miscellaneous electrical applications in industry, commerce, and home life.

Electrical Engineering Curriculum

	—Semester—	
	I	II
<i>Sophomore Year</i>		
G. & P. 1—American Government.....	3	....
Math. 20, 21—Calculus	4	4
Phys. 20, 21—General Physics.....	5	5
Mech. 1—Statics and Dynamics.....	....	3
Surv. 1—Plane Surveying.....	2	....
E. E. 1—Basic Electrical Engineering.....	....	4
M. S. 3, 4—Basic R. O. T. C.....	3	3
Physical Activities	1	1
Total	18	20

Junior Year

Eng. 3, 4—Composition and World Literature; or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
Mech. 51—Strength of Materials.....	3	....
C. E. 50—Hydraulics .....	....	3
Math. 64—Differential Equations.....	3	....
E. E. 60—Electricity and Magnetism	4	....
E. E. 65—Direct Current Machinery.....	....	4
E. E. 100—Alternating Current Circuits.....	6	....
E. E. 101—Engineering Electronics.....	....	6
E. E. 104—Communication Circuits.....	....	3
Total	19	19

Senior Year

H. 5, 6—History of American Civilization.....	3	3
M. E. 51—Thermodynamics.....	4	....
M. E. 52—Power Plants.....	....	4
E. E. 102, 103—Alternating Current Machinery.....	4	4
E. E. 105, 106—Radio Engineering.....	4	4
Electrical Engineering Elective (listed below).....	3	3
Total	18	18

Two of the following courses may be elected:

E. E. 108—Electric Transients.....	....	3
E. E. 109—Principles of Radar.....	....	3
E. E. 114—Applied Electronics.....	3	....
E. E. 116—Alternating-Current Machinery Design.....	....	3
E. E. 117—Power Transmission and Distribution.....	3	....
E. E. 120—Electromagnetic Waves.....	3	....
E. E. 160, 161—Vacuum Tubes.....	3	3

MECHANICAL ENGINEERING

Mechanical Engineering deals with the design, construction, and maintenance of machinery and power plants; heating, ventilation, and refrigeration; and the organization and operation of industrial plants.

Mechanical Engineering Curriculum

	Semester	
	I	II
<i>Sophomore Year</i>		
G. & P. 1—American Government.....	3	....
Soc. 1—Sociology of American Life.....	....	3
Math. 20, 21—Calculus	4	4
Phys. 20, 21—General Physics	5	5
Surv. 1—Plane Surveying .....	....	2
Dr. 3—Advanced Engineering Drawing.....	2	....
Shop 1—Machine Shop Practice.....	2	....
Shop 2—Machine Shop Practice .....	....	1
Shop 3—Foundry Practice .....	....	1
M. S. 3, 4—Basic R. O. T. C.....	3	3
Physical Activities	1	1
Total	20	20

Junior Year—General Option

Eng. 3, 4—Composition and World Literature; or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
Math. 64—Differential Equations for Engineers.....	3	....
Mech. 2—Statics and Dynamics.....	5	....
Mech. 52—Strength of Materials .....	....	5
E. E. 51, 52—Principles of Electrical Engineering.....	4	4
M. E. 53—Metallography .....	....	3
M. E. 54—Fluid Mechanics .....	....	3
M. E. 100—Thermodynamics	3	....
Total	18	18

Junior Year—Aeronautical Option

Eng. 3, 4—Composition and World Literature; or.....	3	3
Eng. 5, 6—Composition and English Literature.....	3	3
Math. 64—Differential Equations for Engineers.....	3	....
Mech. 2—Statics and Dynamics.....	5	....
Mech. 52—Strength of Materials .....	....	5
E. E. 51, 52—Principles of Electrical Engineering.....	4	4
M. E. 53—Metallography .....	....	3
M. E. 55—Fluid Mechanics and Aerodynamics.....	....	3
M. E. 100—Thermodynamics	3	....
Total	18	18

<i>Senior Year—General Option</i>	<i>Semester</i>	
	<i>I</i>	<i>II</i>
Engr. 100—Engineering Contracts and Specifications.....	....	2
H. 5, 6—History of American Civilization.....	3	3
M. E. 101—Heat Transfer	2	....
M. E. 102—Heating and Ventilation.....	3	....
M. E. 103—Refrigeration .....	....	3
M. E. 104, 105—Prime Movers	4	4
M. E. 106, 107—Mechanical Engineering Design.....	4	4
M. E. 108, 109—Mechanical Laboratory	2	2
Total	18	18

Senior Year—Aeronautical Option

Engr. 100—Engineering Contracts and Specifications.....	....	2
H. 5, 6—History of American Civilization.....	3	3
Aero. E. 113, 114—Mechanics of Aircraft Structures.....	3	3
M. E. 101—Heat Transfer	2	....
M. E. 104, 105—Prime Movers	4	4
M. E. 106, 107—Mechanical Engineering Design.....	4	4
M. E. 108, 109—Mechanical Laboratory	2	2
Total	18	18

AGRICULTURE — ENGINEERING

A five-year combined program in Agriculture and Engineering, arranged jointly by the College of Agriculture and the College of Engineering, permits students to become candidates for the degree of Bachelor of Science in Agriculture at the end of four years and for the degree of Bachelor of Science in Civil, Electrical, Mechanical, or Chemical Engineering at the end of the fifth year.

Details of this program will be found listed in the catalog of College of Agriculture.

FELLOWSHIPS OF THE NATIONAL SAND AND GRAVEL ASSOCIATION RESEARCH FOUNDATION AND THE NATIONAL READY MIXED CONCRETE ASSOCIATION RESEARCH LABORATORY

The University of Maryland, in cooperation with the National Sand and Gravel Association and the National Ready Mixed Concrete Association, offers fellowships for research on appropriate problems related to the sand and gravel and the ready mixed concrete industries. The fellowships are known as the Stanton Walker and the Stephan Stepanian Fellowships, respectively. Fellows enter upon their duties on July 1 and continue for 12 months, including one month for vacation. Payments under the fellowships are made at the end of each month and amount to \$750 for the year.

Fellows register as students in the Graduate School of the University of Maryland. Class work will be directed by the heads of the departments

of instruction, but about half of the time will be spent in research work. The faculty supervisor will be the Dean of the College of Engineering of the University of Maryland.

These fellowships are open to graduates in Engineering from an accredited college or university, who are qualified to undertake graduate study and research work leading to a Master's degree. Applications should be accompanied by a certified copy of college record, applicant's recent photograph, statement of technical and practical experience (if any), and letters from three persons, such as instructors or employers, covering specifically the applicant's character, ability, education, and experience.

The applications should be addressed: Dean, College of Engineering, University of Maryland, College Park, Md.

ENGINEERING SHORT COURSES

Through short courses, the College of Engineering carries the benefits of engineering teaching to persons and industries in various parts of the State. These courses offer, in addition to regular instruction, an opportunity for the discussion of problems of interest to those engaged in public works, in public health, and in public safety.

Volunteer Firemen's Short Course. In cooperation with the Maryland State Firemen's Association a short course is held annually at College Park for volunteer firemen throughout the State. This four-day course is designed to bring to firemen the newest developments in fire prevention, control and extinguishment, as well as information on inspection, arson investigation and equipment maintenance.

Information regarding fire service extension courses may be found under "Fire Service Extension Department."

Additional information regarding engineering short courses may be obtained from Dean S. S. Steinberg, College of Engineering.

FIRE SERVICE EXTENSION DEPARTMENT

The Fire Service Extension Department is organized under the College of Engineering in cooperation with the State Department of Vocational Education, and operates with both Federal and State funds. The Department provides in-service training for firemen with classes conducted throughout the State by about 50 local instructors, with one full-time Senior Instructor. Basic training of 75 clock hours is given in the fundamentals of firemanship, as well as an advanced course of 69 clock hours, covering the technical field of fire prevention, control and extinguishment and a third section of 57 clock hours in related technical information. A training course of 45 clock hours for industrial plant fire brigades is also available. A four-day short course is held at the University at the new fire service building the first week in September, and short course outlines have been prepared for watchmen, janitors and building custodians, nurses and hospital at-

tendants, and public school teachers. Firemen who have completed the prescribed training courses have been given preferential rating in positions in the military and naval fire fighting forces.

The Department also serves in an advisory capacity to the State Fire Marshal and municipal authorities in matters of fire prevention, fire protection engineering, and fire safety regulations. The Director serves as Technical Advisor to the Maryland State Firemen's Association, and on various National Committees of the National Fire Protection Association.

Additional information may be obtained from Chief J. W. Just, Director, Fire Service Extension Department, Fire Service Building, University of Maryland, College Park, Maryland.

ENGINEERING EXPERIMENT STATION

WILBERT J. HUFF, *Director.*

The Engineering Experiment Station carries on cooperative investigations with industries of Maryland and Departments of the State and Federal Governments. A diversity of engineering training, experience, and equipment represented by the faculty and laboratories of the College of Engineering is thus made available for the problems under inquiry.

The staff of the College of Engineering available for research studies will be glad to discuss proposed problems of importance to industry and of public interest where means can be found for the cooperative researches; such studies may be undertaken with the approval of the administration of the University.

COURSE OFFERINGS

The University reserves the right to withdraw or discontinue any course for which an insufficient number of students have registered to warrant giving the course. In such an event, no fee will be charged for transfer to another course.

Courses are designated by numbers as follows:

1 to 99: courses for undergraduates.

100 to 199: courses for advanced undergraduates and graduates. (Not all courses numbered 100 to 199 may be taken for graduate credit.)

200 to 299: courses for graduates only.

A course with a single number extends through one semester. A course with a double number extends through two semesters.

Courses not otherwise designated are lecture courses. The number of credit hours is shown by the arabic numeral in parentheses after the title of the course.

A separate schedule of courses is issued each semester, giving the hours, places of meeting, and other information required by the student in making out his program. Students obtain these schedules when they register.

AERONAUTICAL ENGINEERING

For Advanced Undergraduates and Graduates

Aero. E. 101, 102. Aerodynamics (3, 2)—Second and first semesters. Two lectures and one laboratory period a week second semester; two lectures a week first semester.

Basic fluid mechanics and the aerodynamic theory of airfoils. Airplane performance and stability calculation. Laboratory demonstration.

Aero. E. 103. Airplane Detail Drafting (1)—First semester. One laboratory period a week. Prerequisite, Dr. 3.

Standards of airplane drafting. Lofting.

Aero. E. 104. Airplane Layout Drafting (1)—Second semester. One laboratory period a week. Prerequisite, Aero. E. 103.

Layout of component parts of airplanes, wings, fuselage, etc.

Aero. E. 105, 106. Airplane Fabrication Shop (1, 2)—First and second semesters. One laboratory period a week first semester; two laboratory periods a week second semester. Prerequisite, Shop 2.

Machine shop, sheet metal forming and fabrication; wood and plastics; riveting, and welding.

Aero. E. 107, 108. Airplane Design (4, 4)—First and second semesters. Two lectures and two laboratory periods a week. Prerequisites, Mech. 52; Aero. E. 102 and 104.

Theory and practice of airplane design.

Aero. E. 109, 110. Aircraft Power Plants (4, 4)—First and second semesters. Three lectures and one laboratory period a week. Prerequisites, Mech. 52, M. E. 100.

Thermodynamics and dynamics of aircraft power plant design. Gas turbines and jet propulsion. Study and tests of aircraft engines in laboratory.

Aero. E. 111, 112. Aeronautical Laboratory (2, 2)—First and second semesters. One lecture and one laboratory period a week.

Wind tunnel tests. Structure tests. Experiments on hydraulic systems, landing gear operation, etc. Performance tests of aircraft engines and propellers.

Aero. E. 113, 114. Mechanics of Aircraft Structures (3, 3)—First and second semesters. Prerequisite, Mech. 52 and Math. 64.

Principles and problems of airplane stress analysis and design.

For Graduates

Aero. E. 200, 201. Advanced Aerodynamics (3, 3)—First and second semesters. Two lectures and one laboratory period a week. Prerequisites, Aero. E. 101, 102, Math. 64.

Special problems in performance and stability of aircraft. Design of aircraft for speeds approaching the velocity of sound. Wind tunnel research.

Aero. E. 202, 203. Advanced Aircraft Structures (3, 3)—First and second semesters. Two lectures and one laboratory period a week. Prerequisites, Aero. E. 113, 114.

Study of latest scientific reports on aircraft structures. Special problems on wing design for high speeds, high wing loading, thin wing sections, and high aspect ratio. Flexural and torsional stiffness of complete wings. Tests on structures in laboratory.

Aero. E. 204, 205. Aircraft Dynamics (3, 3)—First and second semesters. Two lectures and one laboratory period a week. Prerequisites, Mech. 52, Math. 64.

Study of vibrations, wing flutter, gust loads, and dynamics of landing. Calculations of natural frequencies of vibration of aircraft structures.

Aero. E. 206, 207. Advanced Aircraft Power Plants (3, 3)—First and second semesters. Two lectures and one laboratory period a week. Prerequisites, M. E. 100; Aero. E. 109, 110.

Special problems of thermodynamics and dynamics of aircraft power plants; jet and rocket engines. Research in power plant laboratory.

Aero. E. 208, 209. Advanced Aircraft Design and Construction (3, 3)—First and second semesters. One lecture and two laboratory periods a week. Prerequisites, Aero. E. 107, 108; Math. 64.

A course in project engineering. The student studies methods involved in the design, production, and flight testing of aircraft. Problems in design production, management, testing, etc.

Aero. E. 210. Aerodynamic Theory (3)—First semester. Prerequisites, Aero. E. 101, Math. 64.

A study of the application of hydrodynamic theory to engineering problems. Circulation theory of lift. Induced effects. Velocity potential and stream function. Source and sink flow. Conformal transformation.

(Sherwood.)

Aero. E. 211.—The Design and Use of Wind Tunnels (Supersonic) (3)—First and second semesters.

The design and use of wind tunnels (supersonic). Review of basic aerodynamics and thermodynamics. Problems in supersonic tunnel design such as pumping, power supply, condensation and driers. Equipment for measuring results such as balances, monometers, optical instruments, such as schlieren, spark illumination and Xray equipment.

Investigations in supersonic wind tunnels are described with special reference to similitude required for conversion to full scale.

Aero. E. 212. Bodies at Supersonic Speeds (3)—First semester. Prerequisites, Degree in Aero. E. or M. E. or equivalent, and consent of instructor.

Brief review of gasdynamics, drag, lift, stability, and damping on a body in a supersonic stream. Special aerodynamic problems in the design of supersonic missiles. Methods for obtaining accurate test data on the aerodynamic characteristics of supersonic missiles.

CHEMICAL ENGINEERING

Professor Huff; Associate Professor Bonney; Assistant Professors Gottschalk, Smatko; Instructor Bilbrey.

Ch. E. 10. Water, Fuels and Lubricants (4)—Second semester. Two lectures and two laboratory periods a week. Prerequisites, Chem. 19; Phys. 21, or permission of instructor.

Laboratory work consists of exercises in the usual control methods for testing water, fuels, and lubricants, and some related engineering materials. Laboratory fee, \$8.00 per semester.

(Huff, Bonney, Bilbrey, Gottschalk, Smatko and Staff.)

Ch. E. 21. Crystallography and Mineralogy (2)—Second semester. Two hours a week. Prerequisites, Math. 17; Chem. 3; preceded or accompanied by Phys. 21.

A study of crystalline structure: (1) as an aid in identifying a select number of the more common metallic and non-metallic minerals of major importance in chemistry and metallurgy; and (2) as a basis for understanding the physical and mechanical properties of metals and alloys.

(Gottschalk.)

Ch. E. 60, 61. Principles of Metallurgy (2, 2)—First and second semesters. Two hours a week. Prerequisites, Ch. E. 21 and accompanied or preceded by Ch. E. 103, f, s, and Chem. 187, 188, 189, 190.

After a brief exposition of the methods employed in mineral dressing, the principles peculiar to metallurgy not specifically considered in Ch. E. 21 and 103 f, s, are discussed in the following order: roasting and sintering, reduction and smelting, melting, refining, alloying, casting, heat treating, fabricating, and the mechanical, elastic and other properties of metals and alloys.

(Gottschalk.)

For Advanced Undergraduates and Graduates

Ch. E. 103, f, s. Elements of Chemical Engineering (3, 3)—Three hours a week. Prerequisites, Chem. 3; Phys. 21.

Theoretical discussion of underlying philosophy and methods in chemical engineering and elementary treatment of important operations involving fluid flow, heat flow, evaporation, humidity and air conditioning, distillation, and absorption. Illustrated by problems and consideration of typical processes.

(Huff, Smatko.)

Ch. E. 104. Chemical Engineering Seminar (1, 1)—One hour a week.

Students prepare reports on current problems in chemical engineering and participate in the discussion of such reports.

The content of this course is constantly changing so a student may receive a number of credits by re-registration. (Staff.)

Ch. E. 105, f, s. Advanced Unit Operations (5, 5)—Two lectures and one all-day laboratory period a week. Prerequisites, Ch. E. 103; Chem. 189, 190.

Advanced theoretical treatment of basic chemical engineering operations. Study and laboratory operation of small scale semi-commercial type equipment. A comprehensive problem involving theory and laboratory operations is included to illustrate the development of a plant design requiring the utilization of a number of fundamental topics. Laboratory fee \$8.00 per semester. (Bonney and Staff.)

Ch. E. 106, f, s. Minor Problems (6, 6)—Six hours a week, both semesters. Prerequisites, Ch. E. 105, f, s, or simultaneous registration therein.

Original work on a special problem assigned each student, including the preparation of a complete report covering the study.

(Huff, Bonney, and Staff.)

Ch. E. 107. Fuels and Their Utilization (3)—Second semester. Three hours a week. Prerequisites, Ch. E. 103, or permission of Department of Chemical Engineering.

A study of the sources of solid, liquid, and gaseous fuels, their economic conversion, distribution, and utilization. Problems. (Huff.)

Ch. E. 108, f, s. Chemical Technology (2, 2)—Two hours a week. Prerequisites, Ch. E. 103, or simultaneous registration therein, or permission of the Department of Chemical Engineering.

A study of the principal chemical industries. Plant inspections, trips, reports, and problems. (Smatko.)

Ch. E. 109, f, s. Chemical Engineering Thermodynamics (2, 2)—Two hours a week. Prerequisites, Chem. 189, 190; Ch. E. 103; or permission of instructor.

A study of the application of the principles of engineering and chemical thermodynamics to some industrial problems encountered in the practice of chemical engineering. (Bonney.)

Ch. E. 110. Advanced Chemical Engineering Calculations (3)—First semester. Three hours a week. Prerequisites, Math. 21; Ch. E. 103.

A study of the methods for analysis and solution of chemical engineering problems by use of differential equations. Graphical methods and approximations by use of infinite series are covered. (Bilbrey.)

Ch. E. 114. Applications of Electrochemistry (4)—First semester. Three lecture hours and three laboratory hours per week. Prerequisite, consent of instructor.

Topics: Corrosion, batteries, electroplating, electro-oxidations and reductions, metal winning and refining, electrolytic products, passivation, cathodic protection, electric furnaces, refractories and abrasives and others. Laboratory fee, \$8.00. (Smatko.)

Ch. E. 119. Empirical Equations and Nomography (3)—Second semester. Three hours a week. Prerequisite, consent of instructor.

Formulation of empirical equations to represent laboratory data. Construction of various types of nomographs. (Bilbrey.)

Ch. E. 160, 161. Metallurgical Technology (2, 2)—First and second semesters. Two hours a week. Prerequisites, Ch. E. 60, 61 and Ch. E. 103, f, s, or permission of the instructor.

A study of the principal metallurgical industries, with emphasis on their flow sheets, integrated plants and operating problems. Plant inspections, trips, reports and problems. (Gottschalk.)

Ch. E. 180, 181. Unit Operations in Metallurgy (5, 5)—First and second semesters. Two lectures and one all-day laboratory period a week. Prerequisites, Ch. E. 103, f, s; Ch. E. 21, Chem. 187, 188, 189, 190, or permission of the instructor.

Milling of ores by mechanical means and by flotation; beneficiation of non-metallic raw materials by flotation; utilization of mineral dressing experiments in setting up flow-sheets and in designing mills. Practice in the methods of physical metallurgy for making, testing and controlling the properties of metals and alloys.

Laboratory fee \$8.00 per semester. (Gottschalk.)

For Graduates

Ch. 201, f, s. Graduate Unit Operations and Processes (5, 5 or more)—One hour conference, three or more laboratory periods a week. Prerequisite, permission of the Department of Chemical Engineering.

Advanced theoretical treatment of typical unit operations and processes in chemical engineering. Problems. Laboratory operation of small scale semi-commercial units and processes with supplemental reading, conferences and reports.

Laboratory fee \$8.00 per semester. (Bonney.)

Ch. E. 202. Gas Analysis (3)—One lecture and two laboratory periods a week. One semester. Prerequisite, permission of Department of Chemical Engineering.

Quantitative determination of common gases, fuel gases, gaseous vapors, and important gaseous impurities. Problems.

Laboratory fee \$8.00 per semester. (Bonney.)

Ch. E. 203. Graduate Seminar (1)—One hour a week. Required of all graduate students in Chemical Engineering.

The content of this course is constantly changing so a student may receive a number of credits by re-registration.

Students prepare reports on current problems in chemical engineering and participate in the discussion of such reports. (Staff.)

Ch. E. 205. Research in Chemical Engineering—Credit hours to be arranged.

* The investigation of special problems and the preparation of a thesis in partial fulfillment of the requirements of an advanced degree.

Laboratory fee \$8.00 per semester. (Huff, Bonney, Smatko, Gottschalk.)

Ch. E. 207, f, s. Plant Design Studies (3, 3)—Three conference hours a week. Prerequisite, permission of Department of Chemical Engineering.

(Huff.)

Ch. E. 209, f, s. Plant Design Studies Laboratory (3, 3)—Three laboratory periods a week. Prerequisite, permission of Department of Chemical Engineering.

Laboratory fee \$8.00 per semester. (Bonney.)

Ch. E. 210, f, s. Gaseous Fuels (2, 2)—Two hours a week. Prerequisite, permission of Department of Chemical Engineering.

An advanced treatment of some of the underlying scientific principles involved in the production, transmission and utilization of gaseous fuels. Problems in design and selection of equipment. (Huff.)

Ch. E. 214. Corrosion and Metal Protection (4)—Second semester. Four lecture hours a week. Prerequisites, Ch. E. 114 or Chem. 189 or Chem. 190 or consent of the instructor.

The subjects to be covered include: Theories of corrosion of ferrous and non-ferrous metals, passive films, corrosion inhibitors, metal cleaning, stress corrosion, corrosive chemicals, electrolytic protection, restoration of ancient bronzes, organic coatings, metal coloring, parkerizing, hot dip coatings, plated coatings, and selection of engineering materials. Class demonstrations will illustrate the subject matter. Due to the diversity of subjects and scattered sources, considerable outside reading will be necessary.

(Smatko.)

CIVIL ENGINEERING

Professors Steinberg, Allen; Lecturer Walker; Associate Professors Gohr, Barber, Otts; Assistant Professors Wedding, Pickering, Cournyn; Instructors Harden, Luce, Piper, Redd, Sunier.

C. E. 50. Hydraulics (3)—First and second semesters. Two lectures and one laboratory period a week. Prerequisite, Mech. 1. Required of juniors in civil and electrical engineering.

Hydrostatic pressures on tanks, dams, and pipes. Flow through orifices, nozzles, pipe lines, open channels, and weirs. Use of Reynold's number. Measurement of water. Elementary hydrodynamics. (Cournyn.)

C. E. 51. Curves and Earthwork (3)—Second semester. One lecture and two laboratory periods a week. Prerequisite, Surv. 100.

Computation and field work for simple, compound, and reversed circular curves and spirals; parabolic curves; earthwork computations; complete survey and map, including mass diagram, of a short route.

For Advanced Undergraduates and Graduates

C. E. 100. Theory of Structures (4)—Second semester. Three lectures and one laboratory period a week. Prerequisite, Mech. 50.

Analytic and graphical determination of dead and live load stresses in beams and framed structures; influence lines; lateral bracing and portals; elements of slope and deflection. (Allen.)

C. E. 101. Soil Mechanics (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, Mech. 50 and 53.

An introductory study of the properties and behavior of soils as engineering materials. Soil physics, soil mechanics, and applications to engineering. (Barber.)

C. E. 102. Structural Design (6)—First semester. Four lectures and two laboratory periods a week. Prerequisite, C. E. 100.

Design and detailing of wood and structural steel members and their connections; wind stresses in building frames; structural frameworks. (Allen.)

C. E. 103. Concrete Design (6)—Second semester. Four lectures and two laboratory periods a week. Prerequisite, C. E. 100.

Design and detailing of plain and reinforced concrete structures, applications of slope-deflection and moment distribution theories; rigid frames. (Allen.)

C. E. 104. Water Supply (3)—First semester. Two lectures and one laboratory period a week. Prerequisite, C. E. 50.

Requirements of a municipal water supply—design, operation, maintenance, and administration. (Otts.)

C. E. 105. Sewerage (3)—Second semester. Two lectures and one laboratory period a week. Prerequisite, C. E. 50.

The collection, treatment and disposal of sewage. (Otts.)

C. E. 106. Elements of Highways (3)—First semester. Two lectures and one laboratory period a week. Prerequisite, C. E. 101.

Location, design, construction, and maintenance of roads and pavements. Laboratory problems and field inspection trips. (Gohr.)

For Graduates

C. E. 200. Advanced Properties of Materials (3)—First or second semester. Prerequisite, Mech. 52 or equivalent.

A critical study of elastic and plastic properties, flow of materials, resistance to failure by fracture, impact, and corrosion, the theories of failure. Assigned reading from current literature. (Barber.)

C. E. 201. Advanced Strength of Materials (3)—First or second semester. Prerequisite, Mech. 50, 51, or equivalent.

Special problems in engineering stress analysis. Limitations of flexure and torsion formulas, unsymmetrical bending, curved beams, combined stresses, thin tubes, thick-walled cylinders and flat plates. (Barber.)

C. E. 202. Applied Elasticity (3)—First or second semester. Prerequisite, Math. 64 or equivalent.

Two dimensional elastic problems, general stress-strain analysis in three dimensions, stability of beams, columns, and thin plates. (Allen.)

C. E. 203. Soil Mechanics (3)—First or second semester. Prerequisite, C. E. 106 or equivalent.

A detailed study of the properties of engineering soils. Assigned reading from current literature. (Barber.)

C. E. 204. Advanced Foundations (3)—First or second semester. Prerequisites, C. E. 102, 103, 106 or equivalent.

A detailed study of types of foundations. Design and construction to meet varying soil conditions. (Barber.)

C. E. 205. Highway Engineering (3)—First or second semester. Prerequisite, C. E. 101 or equivalent.

An intensive course in the location, design, and construction of highways. (Gohr.)

C. E. 206. Theory of Concrete Mixtures (3, 3)—First and second semesters. Prerequisite, Mech. 52 or equivalent.

A thorough review of the methods for the design of concrete mixtures, followed by a study of factors affecting the properties of the resulting concrete. This course is intended as a background for work in the field of concrete, concrete aggregates, or reinforced concrete. (Walker.)

C. E. 207. Advanced Structures (4)—First and second semesters. Three lectures and one laboratory period a week. Prerequisites, C. E. 102, 103.

The solution of statically indeterminate structures by classical and modern methods, with emphasis on the latter. (Allen.)

C. E. 208. Advanced Sanitation (3)—First or second semester. Prerequisite, graduate standing in civil engineering.

A detailed study of environment and its relation to disease, covering malaria and its control; rodent control; food sanitation; collection and dis-

posal of municipal refuse; housing sanitation, including plumbing, rat-proofing, etc.; rural water supply and excreta disposal; sanitary inspection procedure. (Otts.)

C. E. 209. Advanced Water Supply (3)—First or second semester. Prerequisite, C. E. 104 or equivalent.

A detailed study of the problems of water supply including recent developments in the treatment of water. (Otts.)

C. E. 210. Advanced Sewerage (3)—First or second semester. Prerequisite, C. E. 105 or equivalent.

A detailed study of the problems of sewerage, including recent developments in the treatment of sewage. (Otts.)

C. E. 211. Sanitary Engineering Design (3)—First or second semester. Prerequisite, C. E. 104, 105 or equivalent.

Practical problems in the design of sewer systems and appurtenances; sewage treatment plants; water collection and distribution systems; water purification plants. (Otts.)

C. E. 212. Research—Credit in accordance with work done. First and second semesters. (Staff.)

C. E. 213. Seminar—First or second semester. Credit in accordance with work outlined by the civil engineering staff. Prerequisite, graduate standing in civil engineering. (Staff.)

DRAWING

Dr. 1, 2. Engineering Drawing (2, 2)—First and second semesters. Two laboratories a week. Required of engineering freshmen.

Lettering, use of instruments, orthographic projection, auxiliary views, revolution, sections, pictorial representation, dimensioning, fasteners, technical sketching, and working drawings.

Dr. 3. Advanced Engineering Drawing (2)—First semester. Two laboratories a week. Required of sophomores in Aeronautical, Civil, and Mechanical Engineering. Prerequisites, Dr. 1 and Dr. 2.

Descriptive Geometry with applications to drafting room problems. Developments, intersections, transition pieces and perspective.

ELECTRICAL ENGINEERING

Professors Corcoran, Reed, and Weber; Associate Professors Hodgins, Wagner, and Small; Assistant Professor Witkowski; Lecturers Davies and Stuntz; Instructors Baxter, Price, and Beam.

E. E. 1. Basic Electrical Engineering (4)—Second semester. Three lectures and one laboratory period a week. Prerequisites, concurrent registration in Math. 21 and Phys. 21. Required of sophomores in electrical engineering.

Basic concepts of electric potential, current, power, and energy; d-c circuit analysis by the mesh-current and nodal methods; network theorems; electric and magnetic field concepts. Laboratory exercises emphasizing basic measurements in electric and magnetic circuits.

(Witkowski and Baxter.)

For Advanced Undergraduates

E. E. 50. Fundamentals of Electrical Engineering (3)—First semester. Two lectures and one laboratory period a week. Prerequisites, Math. 21 and Phys. 21. Required of juniors in civil engineering.

Principles of direct and alternating currents; power circuits and distribution systems; direct and alternating current machines and applications; operating characteristics of electrical machines and transformers. (Beam.)

E. E. 51, 52. Principles of Electrical Engineering (4, 4)—First and second semesters. Three lectures and one laboratory period a week. Prerequisites, Math. 21 and Phys. 21. Required of juniors in aeronautical and mechanical engineering, and seniors in chemical engineering.

A study of elementary direct-current and alternating-current circuits; polyphase circuits; magnetic circuits. Principles of operation of direct- and alternating-current machinery and transformers. Brief study of vacuum tubes operated as rectifiers and amplifiers. (Small.)

E. E. 60. Electricity and Magnetism (4)—First semester. Prerequisites, Math. 21, and Phys. 21, and E. E. 1. Required of juniors in electrical engineering.

Electromagnetism as applied to electrical engineering; electric field theory with emphasis on capacitance calculations, magnetic field theory with emphasis on inductance calculations; elements of electrochemistry; boundary layer phenomena; non-linear circuit elements; high-frequency resistance and inductance calculations involving transmission line parameters. (Reed.)

E. E. 65. Direct-Current Machinery (4)—Second semester. Three lectures and one laboratory period a week. Prerequisites, Math. 21, Phys. 21, and E. E. 1. Required of juniors in electrical engineering.

Construction, theory of operation, and performance characteristics of direct-current generators, motors, and control apparatus. Experiments on the operation and characteristics of direct-current generators and motors. (Hodgins and Price.)

For Advanced Undergraduates and Graduates

E. E. 100. Alternating-Current Circuits (6)—First semester. Five lectures and one laboratory period a week. Prerequisites, Math. 21, Phys. 21, and E. E. 1. Required of juniors in electrical engineering.

Single- and polyphase-circuit analysis under sinusoidal and non-sinusoidal conditions of operation. Harmonic analysis by the Fourier series method.

Theory and operation of mutually-coupled circuits. Elementary symmetrical components. (Hodgins, Witkowski, and Price.)

E. E. 101. Engineering Electronics (6)—Second semester. Five lectures and one laboratory period a week. Prerequisite, E. E. 100. Required of juniors in electrical engineering.

Theory and applications of electron tubes and associated circuits with emphasis on equivalent circuit analysis of audio amplifiers, reactance tubes, feedback amplifiers, oscillators, and detectors. (Corcoran and Reed.)

E. E. 102, 103. Alternating-Current Machinery (4, 4)—First and second semesters. Three lectures and one laboratory period a week. Prerequisites, E. E. 65 and E. E. 100. Required of seniors in electrical engineering.

The operating principles of alternating-current machinery considered from theoretical, design, and laboratory points of view. Synchronous generators and motors; single and polyphase transformers; three-phase induction generators and motors; single-phase induction motors; rotary converters and mercury-arc rectifiers. (Hodgins.)

E. E. 104. Communication Circuits (3)—Second semester. Prerequisites, E. E. 60 and E. E. 100. Required of juniors in electrical engineering.

Long-line theory applied to audio-frequency and ultra-high-frequency systems. Elements of filter theory; impedance matching; Maxwell's equations in rectangular and cylindrical coordinates and in scalar notation; elements of rectangular and circular wave-guide theory. (Reed.)

E. E. 105, 106. Radio Engineering (4, 4)—First and second semesters. Three lectures and one laboratory period a week. Prerequisite, E. E. 101. Required of seniors in electrical engineering.

Characteristics of radio-frequency circuits including the design of tuned coupled circuits and Class C amplifiers. Amplification, oscillation, modulation, and detection with particular emphasis on radio-frequency amplification and broadcast-range reception. Elements of wave propagation and antenna systems. (Wagner and Weber.)

E. E. 108. Electric Transients (3)—Second semester. Prerequisite, E. E. 101. Senior elective.

Current, voltage, and power transients in lumped-parameter networks. Transient phenomena in sweep circuits, multi-vibrators, and inverters. Elements of square-wave testing. (Reed.)

E. E. 109. Principles of Radar (3)—Second semester. Prerequisite, E. E. 105. Senior elective.

Systems for detection of radio echoes; pulse formation; transients in R-C circuits; multivibrators, particularly the cathode-coupled type; indicators; receivers; modulators. (Stuntz.)

E. E. 114. Applied Electronics (3)—First semester. Prerequisite, E. E. 101. Senior elective.

Detectors and discriminators; oscillators; gas tube characteristics and associated circuits; photoelectric tubes and associated circuits; vacuum-tube instruments. (Stuntz.)

E. E. 116. Anternating-Current Machinery Design (3)—Second semester. Two lectures and one calculation period a week. Prerequisite, concurrent registration in E. E. 103.

Derivation of theoretical design equations; practical design considerations; numerical design of transformers, synchronous generators, and induction motors. (Reed.)

E. E. 117. Power Transmission and Distribution (3)—First semester. Prerequisite, concurrent registration in E. E. 102.

Inductance and capacitance calculations of polyphase transmission lines on a per wire basis; effective resistance calculations and depth-of-penetration formula; generalized parameters of four-terminal networks and long-line theory applied to power distribution systems; use of transmission line charts. (Reed.)

E. E. 120. Electromagnetic Waves (3)—First semester. Prerequisites, senior standing in electrical engineering or physics and B average in mathematics. Required of M.S. degree candidates in electrical engineering.

The basic mathematical theory of electromagnetic wave propagation employing Maxwell's equations in vector form and in generalized coordinates; application to wave-guide transmission; concept of retarded magnetic vector potential and its application to dipole radiation. (Reed.)

E. E. 160, 161. Vacuum Tubes (3, 3)—First and second semesters. Prerequisites, senior standing in electrical engineering or physics and B average in mathematics.

Electron emission; laws of electron motion; space charge effects; noise in vacuum tubes; magnetic lenses; klystrons; magnetrons; photoelectric tubes; other special-purpose tubes. (Weber.)

For Graduates

E. E. 200. Symmetrical Components (3)—First semester. Prerequisite, E. E. 103.

Application of the method of symmetrical components to synchronous generators, transmission lines, transformers, static loads possessing mutual coupling, and induction motor loads. Methods of calculating positive, negative, and zero sequence reactances of transmission lines. Complete network solutions in terms of symmetrical components and comparison of those solutions with that obtained by classical methods. Methods of measuring positive, negative, and zero sequence reactances of synchronous generators. (Not offered in 1949-1950.) (Reed.)

E. E. 201. Electromagnetic Theory (3)—Second semester. Prerequisite, E. E. 120. Required of M.S. degree candidates in electrical engineering.

Theoretical analysis and engineering applications of Laplace's, Poisson's, and Maxwell's equations. (Weber.)

E. E. 202, 203. Transients in Linear Systems (3, 3)—First and second semesters. Prerequisite, undergraduate major in electrical or mechanical engineering or physics. Required of M.S. degree candidates in electrical engineering.

Operational circuit analysis; the Fourier integral; transient analysis of electrical and mechanical systems and vacuum tube circuits by the Laplace transform method. (Wagner.)

E. E. 204, 205. Advanced Circuit Analysis (3, 3)—First and second semesters. Prerequisites, undergraduate major in electrical engineering or physics.

The wave character of the steady-state long-line solutions; attenuation and phase characteristics; phase and group velocities; four-terminal network theory; matrix algebra applied to network theory; conventional filter theory. (Not offered in 1949-50.) (Reed.)

E. E. 206, 207. Ultra-High-Frequency Techniques (3, 3)—First and second semesters. Three lectures a week first semester and two lectures and one laboratory period a week second semester. Prerequisite, E. E. 201.

Basic considerations in solving field problems by differential equations; circuit concepts and their validity at high frequency; propagation and reflection of electromagnetic waves; guided electromagnetic waves; high-frequency oscillators and tubes; radiation engineering. (Weber.)

E. E. 209. Stability in Power Systems (3)—Second semester. Prerequisite, E. E. 200.

An extension of symmetrical components, E. E. 200, as applied to power systems; study of the stability problem; the swing equation and its solution; the equal-area and Routh's criteria for stability; solutions of faulted three-phase networks; system design. (Not offered in 1949-50.) (Reed.)

E. E. 210, 211. Advanced Radio Engineering (3, 3)—First and second semesters. Prerequisite, E. E. 106.

Theory of radio-frequency amplification, oscillation, modulation, and detection, including both amplitude-modulation systems and frequency-modulation systems; broadcast antenna systems; theory of radio-frequency measurements. (Davies.)

E. E. 212, 213. Automatic Regulation (3, 3)—First and second semesters. Prerequisite, undergraduate major in electrical or mechanical engineering or physics. (It is desirable that the student should have had E. E. 202.)

The design and analysis of regulatory systems, emphasizing servomechanisms. Regulatory systems are analyzed by means of the governing differential equations to provide background for more practical studies of frequency spectrum analysis. Characteristics of actual systems and practical considerations are studied. (Ahrendt.)

E. E. 215, 216. Radio Wave Propagation (3, 3)—First and second semesters. Prerequisite, E. E. 120.

Propagation over plane earth; underwater reception; propagation over spherical earth; ionospheric propagation; radar propagation and properties of radar targets; refraction; meteorological effects. (Not offered in 1949-50.)
(Katzin.)

E. E. 222. Graduate Seminar (1)—First semester. Prerequisite, approved application for candidacy to the degree of Master of Science or Doctor of Philosophy in electrical engineering.

Seminars are held on topics such as micro-wave engineering, radiation engineering, non-linear circuit analysis, tensor analysis, and other topics of current interest. Since the subject matter is continually changing, a student may receive a number of credits by re-registering.

(Corcoran, Reed, Weber, and Wagner.)

E. E. 232. Active Network Analysis (3)—First semester. Prerequisite, E. E. 202 or E. E. 204.

The complex frequency plane; conventional feedback amplifier theory; Bode's mathematical definitions of feedback and sensitivity; theorems for feedback circuits; stability and physical realizability of electrical networks; Nyquist's and Routh's criteria for stability.
(Corcoran, Trent.)

E. E. 233. Network Synthesis (3)—Second semester. Prerequisite, E. E. 232.

Driving point impedance functions; transfer impedance functions; design of impedance functions with emphasis placed on the manner in which magnetic coupling and feedback coupling between plate and grid of vacuum-tube circuits affects the location of the poles of the system determinant.

(Corcoran, Trent.)

E. E. 235. Applications of Tensor Analysis (3)—Second semester. Prerequisite, E. E. 202.

The mathematical background of tensor notation which is applicable to electrical engineering problems. Applications of tensor analysis to electric circuit theory and to field theory.
(Wagner.)

E. E. 250. Electrical Engineering Research. Prerequisite, approved application for candidacy to the degree of Master of Science or Doctor of Philosophy in electrical engineering. Six semester hours of credit in E. E. 250 are required of M.S. degree candidates and a minimum of twelve semester hours are required of Ph.D. candidates.

A thesis covering an approved research problem and written in conformity with the regulations of the Graduate School is a partial requirement for either the degree of Master of Science or the degree of Doctor of Philosophy in electrical engineering.
(Graduate Staff.)

GENERAL ENGINEERING SUBJECTS

Engr. 1. Introduction to Engineering (1)—First semester. Required of freshmen in engineering.

A course of lectures by the faculty and by practicing engineers covering the engineering professional fields. The purpose of this course is to assist the freshman in selecting the particular field of engineering for which he is best adapted.

For Advanced Undergraduates and Graduates

Engr. 100. Engineering Contracts and Specifications (2)—Second semester. Prerequisite, senior standing in engineering.

The fundamental principles of law relating to business and to engineering; including contracts, agency, negotiable instruments, corporations, common carriers, and their application to engineering contracts and specifications.

(Steinberg.)

MECHANICAL ENGINEERING

Professors Younger, Sherwood; Associate Professors Shreeve, Jackson, Martin, Flodin, Hoshall; Assistant Professors Read, Slingluff; Instructors Allen, Arthur, Clark, Guard, Hayleck, Hennick, Rivello, Vial, Crichton, Baker, Eyster, Leaman, Warner.

For Advanced Undergraduates

M. E. 50. Principles of Mechanical Engineering (3)—First semester. Two lectures and one laboratory period a week. Prerequisites, Phys. 21 and Math. 21. Required of juniors in Civil Engineering.

Elementary thermodynamics and the study of heat, fuel and combustion in the production and use of steam for generation of power. Supplemented by laboratory tests and trips to industrial plants. (Martin.)

M. E. 51. Thermodynamics (4)—First semester. Three lectures and one laboratory period a week. Prerequisites, Math. 21, Phys. 21. Required of seniors in Electrical Engineering.

The theory and application of thermodynamics to the steam engine, steam turbine etc. (Read.)

M. E. 52. Power Plants (4)—Second semester. Three lectures and one laboratory period a week. Required of seniors in Electrical Engineering.

The theory and operation of steam engines, boilers, condensers, steam turbines, and their accessories. (Read.)

M. E. 53. Metallography (3)—First and second semesters. Two lectures and one laboratory period a week. Prerequisite, to be taken concurrently with Mech. 52.

A study of the structure of metals and alloys as related to their properties. Study of crystallization, plastic deformation, constitution diagrams, manufacturing processes, heat treatment and effect of alloying elements

on ferrous and non-ferrous materials. Laboratory work in thermal analysis, microscopy, heat treatment and testing of metals. (Jackson.)

M. E. 54. Fluid Mechanics (3)—Second semester. Two lectures and one laboratory period a week. Prerequisites, Mech. 2, M. E. 100.

A study of fluids under all possible conditions of rest and motion. The approach is analytical, rational, and mathematical rather than empirical. Applications to turbine and centrifugal pump design and flow of gases.

M. E. 55. Fluid Mechanics and Aerodynamics (3)—Second semester. Three lectures a week. Prerequisites, Mech. 2, M. E. 100. Required of juniors in Mechanical Engineering, Aeronautical Option.

A study of the fundamental principles of the flow of air and of water. Applications with special reference to the airplane; airfoil and propeller theory; theory of model testing in wind tunnels; design performance, calculation of airplanes.

For Advanced Undergraduates and Graduates

M. E. 100. Thermodynamics (3)—First semester. Two lectures and one laboratory period a week. Prerequisites, Phys. 21, Math. 21. Required of juniors in Mechanical and Aeronautical Engineering.

The properties, characteristics, and fundamental equations of gases and vapors. An analysis of basic heat engine, air compression, refrigeration, and vapor cycles. Flow and non-flow processes for gases and vapors. Theory supplemented by laboratory tests.

M. E. 101. Heat Transfer (2)—First semester. Two lectures a week. Prerequisites, M. E. 54 and M. E. 100. Required of seniors in Mechanical Engineering.

Basic principles of heat transfer including a study of conduction by steady state and variable heat flow, free and forced convection, radiation, evaporation and condensation of vapors, and the application of the principles of heat transfer to design problems. (Martin.)

M. E. 102. Heating and Air Conditioning (3)—First semester. Two lectures and one laboratory period a week. Prerequisites, M. E. 100, M. E. 54, M. E. 101 concurrently.

Required of seniors in Mechanical Engineering. The fundamentals of heating and cooling load computations. Basic information on heating and air conditioning systems for residential and industrial use. (Martin.)

M. E. 103. Refrigeration (3)—Second semester. Two lectures and one laboratory period a week. Prerequisites, M. E. 100, M. E. 54 taken concurrently with M. E. 101. Required of seniors in Mechanical Engineering.

Problems involving the different methods and processes of refrigeration. Air conditioning for offices, buildings, factories, and homes. (Read.)

M. E. 104, 105. Prime Movers (4, 4)—First and second semesters. Three lectures and one laboratory period a week. Prerequisites, Mech. 52, M. E. 54, M. E. 100. Required of seniors in Mechanical Engineering.

The study of internal combustion cycles such as Otto, Diesel, and Brayton. Analysis of the effects of fuels, combustion, detonation, carburetion, injection and supercharging on engine operation. General features of the gas turbine and the effect of its various components. Analysis and design of the various components of steam power stations, including: condensers, boilers, heaters, and turbines. (Shreeve.)

M. E. 106, 107. Mechanical Engineering Design (4, 4)—First and second semesters. Two lectures and two laboratory periods a week. Prerequisites, Mech. 52, M. E. 53.

A study of velocity, acceleration and displacement of linkages; cam motions and design; statics, inertia and friction forces in machines; gears and miscellaneous motions. Study of stresses and vibrations in machine parts; design of machine members including fastenings, hoisting and power transmission devices, cylinders, springs, shafts, bearings, etc. Design of a complete machine. (Jackson.)

M. E. 108, 109. Mechanical Laboratory (2, 2)—First and second semesters. One lecture and one laboratory period a week. Prerequisite, senior standing. Required of seniors in Mechanical Engineering.

Experiments on fuels and lubricants, steam engines and turbines, air compressors, gasoline and diesel engines and various other mechanical equipment. Written reports are required on all tests. (Shreeve.)

For Graduates

M. E. 200, 201. Advanced Dynamics (3, 3)—First and second semesters. Prerequisites, Mech. 52, Math. 64, M. E. 107; M. E. 109.

Mechanics of machinery. Dynamic forces. Balancing of rotating parts. Vibrations and vibration damping. Critical speeds. (Younger.)

M. E. 202, 203. Applied Elasticity (3, 3)—First and second semesters. Prerequisites, Mech. 52, Math. 64, M. E. 107.

Advanced methods in structural and experimental stress analysis. Advanced strength of materials involving beam problems, curved bars, thin plates and shells, buckling of bars, plates and shells, etc. Advanced work in stress concentrations, plastic deformations, etc. and problems involving instability of structures. (Younger, Jackson.)

M. E. 204, 205. Advanced Thermodynamics and Heat Transfer (3, 3)—First and second semesters. Three lectures a week. Prerequisites, M. E. 101, M. E. 104, M. E. 105, Math. 64.

Advanced problems in thermodynamics on compression of gases and liquids, combustion and equilibrium, humidification and refrigeration and

availability. Problems in advanced heat transfer covering the effect of radiation, conduction, and convection, steady and unsteady flow, evaporation and condensation. (Shreeve.)

M. E. 206, 207. Advanced Machine Design (3, 3)—First and second semesters. One lecture and two laboratory periods a week. Prerequisite, Math. 64, M. E. 107.

Application of advanced methods of stress analysis to design of special stationary and moving machine parts, including rotating disks, bearings, thick wall cylinders, screw fastenings, crankshafts, etc. Application of linear and torsional vibration and balancing in the design of machine members. Complete design of a machine. (Jackson.)

M. E. 208, 209. Steam Power Plant Design (3, 3)—First and second semesters. One lecture and two laboratory periods a week. Prerequisite, M. E. 105.

The design and specifications of steam power plants for specific purposes. Each student will carry out complete design including detail drawings. (Shreeve.)

M. E. 210, 211. Advanced Fluid Mechanics (3, 3)—First and second semesters. Prerequisites, M. E. 54, Math. 64.

Advanced theory of the flow of fluids and gases. Hydrodynamic theory. Engineering applications.

M. E. 212, 213. Advanced Steam Power Laboratory (2, 2)—First and second semesters. One lecture and one laboratory period a week. Prerequisite, registration in M. E. 204, 205.

Research on advanced steam power problems to illustrate and advance steam power theory. Power plant heat balances.

M. E. 214, 215. Advanced Applied Mechanics Laboratory (2, 2)—First and second semesters. One lecture and one laboratory period a week. Prerequisites, registration in M. E. 200, 201 and M. E. 202, 203.

Illustrative experiments and research on difficult problems in stress analysis. Photoelasticity. Mechanical vibrations. Critical speeds. Dynamic stresses. Fatigue of materials. (Jackson.)

M. E. 216, 217. Advanced Internal Combustion Engine Design (3, 3)—First and second semesters. One lecture and two laboratory periods a week. Prerequisites, M. E. 104, 105; M. E. 106, 107 and registration in M. E. 200, 201 and M. E. 204, 205.

Each student will carry out complete designs of internal combustion engines. (Shreeve.)

M. E. 218, 219. Advanced Internal Combustion Engine Laboratory (2, 2)—First and second semesters. One lecture and one laboratory period a week. Prerequisite, registration in M. E. 216, 217.

Advanced laboratory tests and problems in the design of internal combustion engines. (Shreeve.)

M. E. 220. Seminar—Credit in accordance with work outlined by mechanical engineering staff. Prerequisite, graduate standing in mechanical engineering.

M. E. 221. Research—Credit in accordance with work outlined by mechanical engineering staff. Prerequisite, graduate standing in mechanical engineering.

Research in any field of mechanical engineering as applied mechanics, heat transfer, thermodynamics, heat, power, etc.

M. E. 222. Advanced Metallography (3)—First and second semesters. Two lectures and one laboratory period a week. Prerequisite, M. E. 53, Mech. 52.

Advanced study of the structure and properties of metals and alloys. Study of the latest developments in ferrous and non-ferrous alloys including stainless steels, high temperature steels, tool steels, aluminum, magnesium and copper alloys. Study of the physical properties of metals and inspection methods including X-rays, spectograph, metallograph and magniflux. Review of current literature. (Jackson.)

M. E. 223, 224. Steam and Gas Turbine Design (3, 3)—First and Second semesters. Three lectures a week. Prerequisites, M. E. 101, M. E. 104, M. E. 105, Math. 64.

Study of nozzles and blades, with application to all types of turbines and compressors. Design of steam and gas turbines and compressors based on detailed heat calculations. Design of regenerators and combustors for gas turbines. Applications to jet propulsion. Fundamentals of rocket, pulse jet and ram jet design. (Shreeve.)

M. E. 225, 226. Advanced Properties of Metals and Alloys (2, 2)—First and second semesters. Two lectures a week. Prerequisite, Mech. 52, M. E. 53, M. E. 106, M. E. 107.

Mechanical properties of alloys and the equilibrium diagram. Effects of mechanical deformation and methods of fabrication on mechanical properties. Effect of extreme temperature. Theory of plastic deformation. Fatigue, creep and damping capacity. Speed effects and stress concentration.

M. E. 227, 228. Theory of Elasticity (3, 3)—First and second semesters. Three lectures a week. Prerequisites, Mech. 52, M. E. 53, M. E. 106, M. E. 107, Math. 64.

Stress and strain at a point. Relation between stresses and strains, general equations of elasticity, plane strain and plane stress, torsion, bending, axially symmetric distribution of stress, plates, thermal stresses, strain energy and approximate methods.

M. E. 229, 230, 231. Jet Propulsion (2, 2, 2)—Prerequisites, M. E. 101, M. E. 104, M. E. 105.

Types of thermal jet units Fluid reaction and propulsive efficiency. Performance of rockets, aerothermodynamics, combustion chemical kinetics, aerodynamics of high speed air flow. Principles and design of solid and liquid propellant rockets. Design of turbojets and aerojets, ramjets and hydroduct units, including combustion chambers, turbines and compressors.

Mechanical Engineering Shop

Shop 1. Machine Shop Practice (2)—First semester. One lecture and one laboratory period a week. Required of sophomores in Aeronautical and Mechanical Engineering.

Study and practice of fundamental principles of machine tools.

Shop 2. Machine Shop Practice (1)—Second semester. One laboratory period a week. Prerequisite, Shop 1. Required of sophomores in Aeronautical and in Mechanical Engineering.

Advanced practice with standard machine tools. Exercises in thread cutting, fluting, cutting spur and helical gears, jig work, and cutter and surface grinding.

Shop 3. Foundry Practice (1)—Second semester. One combination lecture and laboratory period a week. Required of sophomores in Mechanical Engineering.

Lectures, demonstrations, and quizzes on sand and die casting, extrusion, spinning, welding, hot and cold forming of metals.

MECHANICS

Mech. 1. Statics and Dynamics (3)—Second semester. Prerequisite, Math. 21, Phys. 21.

Solutions of force systems; graphic statics; friction, centroids and moments of inertia; kinematics and kinetics; work, power, energy, impulse and momentum.

Mech. 2. Statics and Dynamics (5)—First semester. Prerequisite, Dr. 3, Math. 21, Phys. 21. Required of juniors in Mechanical and Aeronautical Engineering.

Solution of force systems in stationary and moving bodies; study of the free body, graphical statics, three dimensional force systems, distributed forces, friction, centroids and moments of inertia; study of the dynamics of bodies including velocity, acceleration, translation, rotation, work and energy, impulse and momentum.

Mech. 3, 4. Statics and Dynamics (3, 3)—First and second semesters. Prerequisites, Math. 21, Phys. 21. Required of juniors in Chemical Engineering.

Solutions of force systems; graphic statics; friction, centroids and moments of inertia; kinematics and kinetics; work, power, energy, impulse and momentum. Thin-wall cylinders, joints, torsion; stresses and deflections in beams and columns; combined loading.

For Advanced Undergraduates

Mech. 50. Strength of Materials (4)—First semester. Prerequisite, Mech. 1 or 2, or equivalent. Required of juniors in civil engineering.

Thin-walled cylinders; riveted and welded joints, torsion; stresses in beams; design of columns; use of structural steel handbook. Beam deflections; statically indeterminate beams; combined loadings; composite beams; impact and energy loadings.

Mech. 51. Strength of Materials (3)—First semester. Prerequisite, Mech. 1 or 2, or equivalent. Required of juniors in electrical engineering.

A shorter course than Mech. 50.

Mech. 52. Strength of Materials (5)—Second semester. Prerequisite, Mech. 2. Required of juniors in Mechanical and Aeronautical Engineering.

Study of the stresses and strains in members under various types of loadings including tension, compression, shear, torsion, bending and combined loads. Study of cylinders, joints, beams, statically indeterminate members, columns, curved bars and shafts. Work in strain energy methods, photoelastic theory, fatigue and strain hardening. (Flodin.)

Mech. 53. Materials of Engineering (2)—Second semester. One lecture and one laboratory period a week. Prerequisite, Mech. 50 or taken concurrently with Mech. 50.

The composition, manufacture, and properties of the principal materials used in engineering; performance of standard tests; interpretation of test results and of specifications.

SURVEYING

Surv. 1, 2. Plane Surveying (2, 2)—First and second semesters. One lecture and one laboratory period a week. Prerequisite, Math. 14. Surv. 1 required of sophomores in Aeronautical, Chemical, Electrical, and Mechanical Engineering. Surv. 1, 2 required of sophomores in Civil Engineering.

Theory and practice in the use of the tape, compass, transit, and level. General survey methods, traversing, area, coordinates, profiles, cross-sections, volume, stadia.

Surv. 100. Advanced Surveying (4)—First semester. Two lectures and two laboratory periods a week. Prerequisites, Surv. 1, 2.

Adjustment of instruments, latitude, longitude, azimuth, time, triangulation, precise leveling, geodetic surveying, together with the necessary adjustments and computations. Topographic surveys. Plane table, land surveys, and boundaries. Mine, tunnel, and hydrographic surveys. Aerial photogrammetry. (Gohr.)

College of
HOME ECONOMICS

M. Marie Mount, M.A., Dean

EMILY W. AKIN, M.S., Assistant Professor of Textiles.

JEANNE W. BEATY, M.S., Assistant Professor of Textiles

IRMA C. BRADFORD, M.S., Associate Professor of Home Economics Education.

ALLISON T. BROWN, Instructor in Art.

LOUISE BURKE, B.S., Instructor in Home Management.

SUZANNE CASSELS, B.A., Instructor in Art.

EDDIE MAE CORNELL, M.S., Instructor in Foods and Nutrition.

JANE H. CROW, M.S., Assistant Professor of Home Management.

GEORGE H. CUNEO, B.S., Assistant Professor of Practical Art.

VIENNA CURTISS, M.A., Professor of Art.

FREMONT DAVIS, Instructor in Art.

HARRIETT L. FRIEMEL, B.S., Instructor in Textiles and Clothing.

F. LOUISE HAGEL, B.S., Lecturer in Foods and Nutrition.

HELEN E. HOUSTON, B.A., Instructor in Textiles and Clothing.

GORDON C. LAWSON, B.S., Assistant Professor of Art.

DOROTHY L. LEGRAND, M.S., Instructor in Foods and Nutrition.

T. FAYE MITCHELL, M.A., Associate Professor of Textiles and Clothing.

M. MARIE MOUNT, M.A., Professor of Home and Institution Management.

AGNES NEYLAN, M.S., Assistant Professor of Foods and Nutrition.

JEANNE PALMER, Instructor in Art.

ADA F. PEERS, M.S., Assistant Professor of Foods and Nutrition.

MABEL S. SPENCER, M.S., Instructor in Foods and Nutrition.

ISABELLE I. TOMBERLIN, M.S., Instructor in Foods and Nutrition.

JUNE C. WILBUR, M.S., Assistant Professor of Textiles and Clothing.



Entrance to College of Home Economics

COLLEGE OF HOME ECONOMICS

M. MARIE MOUNT, M.A., *Dean*

The College of Home Economics serves Maryland and the surrounding area with its educational program for both young women and young men. The program for young women combines good personal development with education for homemaking and for a livelihood. Information on better health principles, good study habits, efficient use of time, good grooming, becoming dress and proper adjustment to new situations constitute the student's program for self-development. The program for men is directed toward enriched living, vocationally and avocationally. It emphasizes art in merchandising and in crafts, food service, and textile technology.

In the professional phases of the program, the student consults with the faculty member assigned as adviser, and has the opportunity to consult with leaders in the chosen field.

Students are urged to acquire practical experience during vacations. This experience may be gained either in the actual management of the family home, in some professional phase of home economics, or both. Students preparing to teach gain experience on playgrounds in caring for children and in executing home projects. Commercial firms and institutions provide opportunities for other types of experience.

Organization

For administrative purposes the College of Home Economics is organized into the Departments of Textiles and Clothing, Practical Art, Home and Institution Management, and Foods and Nutrition.

Facilities

The home of the College of Home Economics, following campus tradition, is a colonial brick building planned and built to present the best modern equipment and facilities for education in home economics. A home management house is maintained on the campus for experience in homemaking.

Located, as the campus is, between two large cities, unusual opportunities are provided for both faculty and students. In addition to the University's excellent general and specialized libraries, Baltimore and Washington furnish the added library facilities so essential to scientific research and creative work in the arts. The art galleries and museums with their priceless exhibits, the government bureaus and city institutions, stimulate study and provide practical experience for the home economics student.

Home Economics Club: Membership is open to all home economics students. The Club is affiliated with the American Home Economics Association.

Omicron Nu, national home economics honor society: Students of high scholarship are eligible for election to membership twice during the year. Twelve percent of the senior class is elected for membership in the fall and eight percent of the junior class in the spring.

Honors and Awards, Scholarships and Loan Fund

Home Economics scholarships: Two thousand dollars has been made available by Marie Mount to home economics students.

The Danforth Foundation and the Ralston Purina Company Summer Fellowships: One of four weeks to an outstanding junior; one of two weeks to an outstanding freshman.

Borden Home Economics Scholarship Award: Three hundred dollars is given by the Borden Company to the home economics student, who, upon entering her senior year, has completed two or more courses in foods and nutrition and has the highest scholastic standing of eligible students.

Retail Merchants Association of Baltimore Scholarship: Two \$300 scholarships are provided for residents of the State of Maryland who have completed the junior year of the Practical Art curriculum. Each recipient must have shown proficiency and interest in merchandising.

Hecht Company of Washington Scholarship: A \$300 scholarship is offered to a resident of Maryland, or the District of Columbia, who is interested in merchandising as a career. The student must have completed the junior year of the Practical Art curriculum and have met other specific requirements.

Omicron Nu Scholarship Award: Omicron Nu presents annually an award to the freshman in the College of Home Economics who attains the highest scholastic average during the first semester.

A loan fund, composed of contributions by the District of Columbia Home Economics Association, Maryland Chapter of Omicron Nu, and personal gifts, is available for students majoring in home economics.

For other scholarships and awards see General Information Bulletin.

Admission

The requirements for admission to the College of Home Economics are, in general, the same as for other divisions of the University.

Degrees

The degree of Bachelor of Science is conferred for the satisfactory completion, with an average of C or better, of a prescribed curriculum of 120 semester hour credits exclusive of 4 credits in hygiene and 4 in physical activities—a total of 128 credits for women, and exclusive of 12 credits in basic R. O. T. C. and 4 in physical activities—a total of 136 credits for men.

The Master of Science degree is offered in Foods and Nutrition, Textiles and Clothing and in Home Economics Education in the College of Education.*

* See the Graduate School announcements.

The Student Load

The student load in the College of Home Economics varies from 14-18 credits. A student wishing to carry more than 18 credits must have a B-grade average and the permission of the Dean.

Curricula†

A student may elect the curriculum in general home economics or one of the following professional curricula, or a combination of curricula: Home economics education, textiles and clothing, practical art, crafts, home economics extension, institution management, and foods and nutrition. A student who wishes to teach home economics may register in home economics education in the College of Home Economics or in the College of Education. (See Home Economics Education.) All students follow the general home economics curriculum during the freshman year. It is advisable for students to choose a professional curriculum at the beginning of the sophomore year. The student who has not decided to specialize follows the general home economics curriculum until a choice is made. Before continuing with the third year of any curriculum, the student must have attained junior standing: 64 semester hours with a C-grade average.

GENERAL HOME ECONOMICS

The general home economics curriculum is planned to give a young woman a good basis for her best personal development, as has been described earlier. It provides good training for her as a future homemaker. This curriculum also forms the basis of all the professional curricula. The additional requirements of the professional curricula are listed under the description of each.

<i>Freshman Year</i>	—Semester—	
	<i>I</i>	<i>II</i>
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	....	3
G. & P. 1—American Government.....	3	....
Speech 18, 19—Introductory Speech.....	1	1
*H. E. 1—Home Economics Lectures.....	1	....
Tex. 1—Textiles .....	....	3
Pr. Art 1—Design.....	3	....
**Hea. 2, 4—Hygiene.....	2	2
Physical Activities	1	1
‡Math. 0—Basic Mathematics or.....	....	0
Elective	3	3
Total	17	13-16

† In order to meet the particular need of a student, certain adjustments in these requirements may be made with the approval of the student's adviser and Dean.

* Not required of men students.

** Men students take M. S. 1, 2 (3, 3) in place of Hea. 2, 4.

‡ An examination in Mathematics will be given to freshmen during the first semester; those who pass will not be required to take Math. 0.

<i>Sophomore Year</i>	Semester	
	I	II
Eng. 3, 4—Composition and World Literature or.....	3	3
Eng. 5, 6—Compositions and English Literature.....	(3)	(3)
Chem. 11, 13—General Chemistry.....	3	3
Foods 2, 3—Foods.....	3	3
Econ. 37—Fundamentals of Economics.....	3	....
Psych. 1—Introduction to Psychology.....	....	3
Clo. 20A—Clothing Construction.....	3	....
Pr. Art 20—Costume Design.....	....	3
Physical Activities.....	1	1
Total	16	16
<i>Junior Year</i>		
Home Mgt. 150, 151—Management of the Home.....	3	3
Nut. 110—Nutrition or.....	3	....
Nut. 10—Elements of Nutrition.....	(3)	....
Pr. Art 2—Survey of Art History.....	2	....
Pr. Art 140, 141—Interior Design.....	1	3
Clo. 22—Clothing Construction.....	....	2
Foods 101—Meal Service.....	....	2
Foods 100—Food Economics.....	2	....
Physics 1, 2—Elements of Physics.....	3	3
Elective.....	3	3
Total	17	16
<i>Senior Year</i>		
H. 5, 6—History of American Civilization.....	3	3
Home Mgt. 152—Practice in Management of the Home.....	....	3
H. E. Ed. 110—Child Development.....	3	....
Bact. 51—Household Bacteriology.....	....	3
Zool. 16—Human Physiology.....	4	....
Electives.....	6	5
Total	15	14

Textiles and Clothing

The curricula below have been planned to meet the demand for technically trained college women in the fields of textiles, clothing, and fashion. Information in these fields is also presented with a broad consumer slant for personal use.

Men specializing in textiles will be allowed substitutions for certain required courses.

<i>Sophomore Year</i>	Semester	
	<i>I</i>	<i>II</i>
Eng. 3, 4—Composition and World Literature or.....	3	3
Eng. 5, 6—Composition and English Literature.....	(3)	(3)
Chem. 11, 13—General Chemistry	3	3
Foods 1—Introductory Foods.....	....	3
Econ. 37—Fundamentals of Economics.....	3	....
Psych. 1—Introduction to Psychology.....	....	3
Pr. Art 20—Costume Design .....	....	3
Clo. 20A—Clothing Construction.....	3	....
Clo. 22—Clothing Construction.....	....	2
Physical Activities	1	1
Electives	2	....
Total	15	18

Textiles*Junior Year*

Home Mgt. 150, 151—Management of the Home.....	3	3
Foods 101—Meal Service.....	2	....
Nut. 10—Elements of Nutrition or.....	3	....
Nut. 110—Nutrition	(3)	....
Art	2	....
Physics 1, 2—Elements of Physics.....	3	3
Chem. 31, 32, 33, 34—Elements of Organic Chemistry.....	3	3
Math. 10—Algebra .....	....	3
Tex. 100—Advanced Textiles .....	....	3
Tex. 108—Decorative Fabrics.....	....	2
Total	16	17

Senior Year

H. 5, 6—History of American Civilization.....	3	3
Bact. 51—Household Bacteriology .....	....	3
Tex. 101—Problems in Textiles.....	3	....
Chem. 41—Chemistry of Textiles .....	....	4
Home Mgt. 152—Practice in Management of the Home.....	3	....
H. E. Ed. 110—Child Development.....	3	....
Math. 13—Elementary Mathematical Statistics.....	....	3
Speech	3	....
Electives .....	....	2
Total.....	15	15

Textiles and Clothing

	Semester	
	I	II
<i>Junior Year</i>		
Home Mgt. 150, 151—Management of the Home.....	3	3
Nut. 10—Elements of Nutrition.....	3	....
Art	3	3
Clo. 122—Tailoring	2	....
Clo. 121—Pattern Design.....	....	2
Text. 100—Advanced Textiles .....	....	3
Foods 101—Meal Service .....	....	2
Psychology	3	....
Tex. 108—Decorative Fabrics .....	....	2
Electives	2	....
Total	16	15

Senior Year

H. 5, 6—History of American Civilization.....	3	3
Bact. 51—Household Bacteriology .....	....	3
H. E. Ed. 110—Child Development.....	3	....
Tex. 105—Consumer Problems in Textiles.....	3	....
Home Mgt. 152—Practice in Management of the Home.....	3	....
Clo. 120—Draping	3	....
Clo. 124—Projects and Readings in Textiles and Clothing.....	....	2
Speech .....	....	3
Clo. 126—Fundamentals of Fashion.....	....	3
Electives	2	2
Total	17	16

Practical Art

This curriculum permits a choice of three fields of concentration: advertising, interior design, costume design. Emphasis is given to the selection of house furnishings and wearing apparel with relation to personality. Positions available to graduates begin with advertising, selling, display, comparison shopping, textile advising, and radio work; they develop into advanced positions in these fields or in departmental buying, department managing, style coordination, personality consulting, designing, store training and personnel work.

Practical Art (For Women)

**Freshman Year*

	Semester	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and World Literature or.....	3	3
Eng. 5, 6—Composition and English Literature.....	(3)	(3)
Chem. 11, 13—General Chemistry.....	3	3
Foods 1—Introductory Foods	3	....
Econ. 37—Fundamentals of Economics.....	3	....
Psych. 1—Introduction to Psychology.....	....	3
Pr. Art 20—Costume Design.....	3	....
Clo. 20—Clothing Construction .....	....	3
Pr. Art 30—Typography and Lettering.....	....	3
Physical Activities	1	1
Electives	2	2
Total	18	18

Junior Year

Home Mgt. 150, 151—Management of the Home.....	3	3
Foods 101—Meal Service	2	....
Nut. 10—Elements of Nutrition.....	....	3
Pr. Art 140, 141—Interior Design.....	1	3
Econ. 150—Marketing Principles and Organization.....	3	....
B. A. 154—Retail Store Management and Merchandising.....	....	3
Pr. Art 0—Professional Lectures .....	....	0
**French, Spanish, German or Elective.....	3	3
Electives	4	2
Total	16	17

Senior Year

H. 5, 6—History of American Civilization.....	3	3
Home Mgt. 152—Practice in Management of the Home.....	(3)	3
Pr. Art 136—Merchandise Display.....	2	(2)
Pr. Art 132—Advertising Layout.....	2	....
H. E. Ed. 110—Child Development.....	....	3
Tex. 105—Consumer Problems in Textiles.....	....	3
Speech 115—Radio in Retailing.....	3	....
Pr. Art 120—Costume Illustration or.....	(2)	(2)
Pr. Art 142—Advanced Interior Design.....	2	2
Electives	4	....
Total	16	14

* Pr. Art 2—Survey of Art History (2) is a required subject which should be taken the fall term of the Freshman Year.

** One year of French, Spanish, or German is required of every student who has not completed two years of one of these languages, with a grade of C or better, in high school.

Note: Students, who are majoring in Costume Design, are advised to take Pr. Art 21 Action Drawing (2), Clo. 120 Draping (3), Clo. 121 Pattern Design (2).

Students who are interested in Merchandising, are advised to take Pr. Art 198 Store Experience (3) the summer following their junior year; they must make their arrangements with the Head of the Department of Practical Art during the spring semester of the junior year.

Practical Art (For Men)

Requirements are the same as for the curriculum in Practical Art, as set up for women, with the following exceptions:

Omissions—H. E. 1; Pr. Art 20; Clo. 20; Foods 1, 101; Home Mgt. 150, 151, 152; Tex. 105; H. E. Ed. 110.†

Additions—H. E. 2; M. I. 1, 2, 3, 4; also, 15 hours in art in merchandising and merchandising courses to be selected in consultation with the Head of the Department of Practical Art.

Crafts

This curriculum serves persons who are interested in crafts for recreational, therapeutic, and professional purposes. Emphasis is given to the joy of creation through crafts. Positions available to graduates include industrial designing, occupational therapy, instruction at recreation centers, and classroom teaching of crafts.

Crafts (For Women)

*Freshman Year

	Semester	
	I	II
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and World Literature or.....	3	3
Eng. 5, 6—Composition and English Literature.....	(3)	(3)
Chem. 11, 13—General Chemistry.....	3	3
Foods 1—Introductory Foods.....	3	....
Econ. 37—Fundamentals of Economics.....	3	....
Psych. 1—Introduction to Psychology.....	....	3
Pr. Art 2—Costume Design.....	3	....
Clo. 20—Clothing Construction.....	....	3
Cr. 2—Simple Crafts.....	....	2
Pr. Art 3—Creative Art Inspired by Primitive Art.....	2	....
Pr. Art 4—Three Dimensional Design.....	....	2
Physical Activities.....	1	1
Total.....	18	17

Junior Year

Home Mgt. 150, 151—Management of the Home.....	3	3
Foods 101—Meal Service.....	2	....
Nut. 10—Elements of Nutrition.....	....	3
Pr. Art 140, 141—Interior Design.....	1	3
Cr. 20, 21—Ceramics.....	2	2
Cr. 30, 31—Metalry.....	2	2
Pr. Art 0—Professional Lectures.....	....	0
**French, Spanish, German, or Elective.....	3	3
Electives.....	4	2
Total.....	17	18

† Required courses which have been omitted may be taken as electives.

* Pr. Art 2 Survey of Art History is a required subject which should be taken the fall term of the Freshman Year.

** One year French, Spanish, or German is required of every student who has not completed two years of one of these languages, with a grade of C or better, in high school.

Note: Students, who expect to work in occupational therapy, are advised to elect courses in physiology, kinesiology and mental hygiene.

<i>Senior Year</i>	Semester	
	I	II
H. 5. 6—History of American Civilization.....	3	(3)
Home Mgt. 152—Practice in Management of the Home.....	3	(3)
H. E. Ed. 110—Child Development.....	.....	3
Cr. 40, 41—Weaving	2	2
Advanced Crafts	4	4
Cr. 198—Crafts in Therapy.....	.....	2
Electives	3	.....
Total	15	14

Crafts (For Men)

Requirements are the same as for the Curriculum in Crafts, as set up for women, with the following exceptions:

† Omissions—H. E. 1; Pr. Art 20; Clo. 20; Foods 1, 101; Home Mgt. 150, 151, 152; H. E. Ed. 110.

Additions—H. E. 2; M. I. 1, 2, 3, 4; also, 15 hours in art, crafts, and therapy courses to be selected in consultation with the Head of the Department of Practical Art.

For other curricula in art, see offerings under the College of Education and the College of Arts and Science.

Home Economics Education

The Home Economics Education curriculum is designed for students who are preparing to teach vocational or general home economics or to engage in any phase of home economics work which requires a knowledge of teaching methods. It includes studies of all phases of home economics and the allied sciences, with professional training for teaching these subjects. A student majoring in this curriculum may also qualify for a science minor.

Students electing this curriculum may register in the College of Education or the College of Home Economics.

Home Economics Education Curriculum

Freshman Year

Ed. 2—Introduction to Education.....	2	.....
Eng. 1, 2—Composition and American Literature, or.....	3	3
Eng. 5, 6—Composition and English Literature.....	(3)	(3)
Soc. 1—Sociology of American Life.....	3	.....
Pol. Sci. 1—American Government.....	.....	3
Speech 1, 2—Public Speaking.....	2	2
H. E. 1—Home Economics Lectures.....	1	.....
Pr. Art 1—Design	3	.....
Math. O or Elective.....	.....	3
P. E. 42, 44—Hygiene I, II.....	2	2
Physical Activities	1	1
Tex. 1—Textiles .....	.....	3
Total	17	17

† Required courses which have been omitted may be taken as electives.

<i>Sophomore Year</i>	Semester	
	I	II
Ed. 3—Educational Forum .....	....	1
Eng. 3, 4—Composition and World Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Chem. 11, 13—General Chemistry.....	3	3
Pr. Art 20—Costume Design.....	....	3
Clo 20A or B—Clothing.....	3	....
Foods 2, 3—Foods.....	3	3
Physical Activities	1	1
Total	16	17

Junior Year

H. E. Ed. 101—Curriculum, Instruction, and Observation.....	....	3
Psych. 110—Educational Psychology	3	....
Home Mgt. 150, 151—Home Management.....	3	3
Nut. 10—Elements of Nutrition.....	....	3
Foods 100—Food Economics	2	....
Foods 101—Meal Service.....	....	2
Clo. 120—Draping .....	....	3
Pr. Art. 2—Survey of Art History.....	2	....
Pr. Art 140—Interior Design	1	....
Econ. 37—Fundamentals of Economics.....	3	....
Zool. 16—Human Physiology	4	....
Bot. 1—General Botany .....	....	4
Total	18	18

Senior Year

H. E. Ed. 102—Problems in Teaching Home Economics.....	3	....
H. E. Ed. 103—Teaching Secondary Vocational Home Economics.....	....	4-8
Home Mgt. 152—Practice in Management of the Home.....	....	3
H. E. Ed. 110—Child Development.....	3	....
Ed. 150—Educational Measurement.....	2	....
Bact. 51—Household Bacteriology	3	....
Ed. 130—Theory of the Junior High School or.....	2	....
Ed. 131—Theory of the Senior High School.....	....	....
Ed. 160—Educational Sociology	2	....
———Child Study .....	....	3
Total	15	10

Home Economics Extension*

This curriculum outlines the training necessary for the young woman who wishes to work with rural people through extension service or other agencies interested in the educational and social problems of rural living.

* Practice work in the field of Home Economics Extension or in social case work is encouraged for all students majoring in this curriculum. Such experience should be gained before the completion of the senior year.

<i>Sophomore Year</i>	—Semester—	
	I	II
Eng. 3, 4—Composition and World Literature or.....	3	3
Eng. 5, 6—Composition and English Literature.....	(3)	(3)
Chem. 11, 13—General Chemistry	3	3
Foods 2, 3—Foods	3	3
Econ. 37—Fundamentals of Economics.....	.....	3
Pr. Art 20—Costume Design.....	.....	3
Clo. 20 A or B—Clothing Construction.....	3	.....
Zool. 16—Human Physiology	4	.....
Physical Activities	1	1
Total	17	16
 <i>Junior Year</i>		
Home Mgt. 150, 151—Management of the Home.....	3	3
Foods 100—Food Economics	2	.....
Nut. 110—Nutrition	3	.....
Chem. 31, 32, 33, 34—Elements of Organic Chemistry.....	3	3
Physics 1, 2—Elements of Physics.....	3	3
Ed. 190—Principles of Education.....	.....	2
R. Ed. 114—Rural Life Education.....	.....	3
Electives	3	2
Total	17	16
 <i>Senior Year</i>		
H. 5, 6—History of American Civilization.....	3	3
Home Mgt. 152—Practice in Management of the Home.....	.....	3
Foods 103—Demonstrations	2	.....
Bact. 51—Household Bacteriology .....	.....	3
H. E. Ed. 110—Child Development.....	3	.....
Clo. 120—Draping .....	.....	3
Foods 102—Experimental Foods	3	.....
Psych. 110—Educational Psychology	3	.....
H. E. Ext. 100—Methods in Home Economics Extension.....	.....	3
Pr. Art 2—Survey of Art History.....	2	.....
Pr. Art 140, 141—Interior Design.....	1	3
Total	17	18

Institution Management

This curriculum provides training for those interested in housing and the food service administration for large groups of persons. The work is of two general types: (1) food service in such institutions as hospitals, schools and colleges; in the public schools where a midday meal is served; and in commercial organizations: restaurants, inns, hotels and industrial cafeterias; (2) housekeeping in inns and hotels; and in hospitals, schools and colleges.

Standards for an accredited dietitian require a year of internship in a training course approved by the American Dietetic Association, following graduation. This curriculum meets the academic requirements for entrance to such a course.

Students following this curriculum are required to have, before the senior year, field experience in food service. This experience must be satisfactory in length of time, type of work experienced and in quality.

Men specializing in institution management will be allowed substitutions for certain required courses.

<i>Sophomore Year</i>	—Semester—	
	I	II
Eng. 3, 4—Composition and World Literature or.....	3	3
Eng. 5, 6—Composition and English Literature.....	(3)	(3)
Chem. 11, 13—General Chemistry	3	3
Foods 2, 3—Foods	3	3
Econ. 37—Fundamentals of Economics.....	....	3
Zool. 16—Human Physiology	4	....
Physical Activities	1	1
*Electives	3	3
Total	17	16

For students wishing emphasis on food service administration:

Junior Year

Home Mgt. 150, 151—Management of the Home.....	3	3
Nut. 110—Nutrition	3	....
Nut. 112—Dietetics .....	....	3
Chem. 31, 32, 33, 34—Organic Chemistry.....	3	3
Inst. Mgt. 160—Institution Organization and Management.....	3	....
Inst. Mgt. 161—Institution Purchasing and Accounting.....	....	3
Ed. 190—Principles of Education.....	....	2
Phys. 1—Elements of Physics	3	....
H. E. Ed. 110—Child Development .....	....	3
Elective	2	....
Total	17	17

Senior Year

H. 5, 6—History of American Civilization.....	3	3
Home Mgt. 152—Practice in Management of the Home.....	....	3
Pr. Art 2—Survey of Art History.....	2	....
Pr. Art 140—Interior Design.....	1	....
Bact. 51—Household Bacteriology .....	....	3
Foods 102—Experimental Foods	3	....
Inst. Mgt. 162—Institution Foods.....	....	3
**Nut. 113—Diet in Disease.....	2	....
Inst. Mgt. 164—Advanced Institution Management.....	....	2
Chem. 81, 82—General Bio-Chemistry.....	4	....
Psych. 110—Educational Psychology .....	....	3
Electives	2	....
Total	17	17

* One of the following selection of courses is to be taken in place of a freshman or sophomore elective: Pr. Art 20, Costume Design (3), Clo. 20 A or B, Clothing Construction (3), Clo. 21, Personal Clothing Problems (2).

** A student planning to do institutional work other than hospital dietetics is not required to take Principles of Education and Diet in Disease.

For students wishing emphasis on housekeeping administration:

<i>Junior Year</i>	Semester	
	<i>I</i>	<i>II</i>
Nut. 10—Elements of Nutrition.....	3	3
Physics 1—Elements of Physics.....	3	....
H. E. Ed. 110—Child Development.....	3	....
Psych. 110—Educational Psychology or.....	3	3
(Ed. 191—Principles and Problems of Adult Education).....	....	(3)
Pr. Art 2—Survey of Art History.....	2	....
Pr. Art 140—Interior Design.....	1	....
Problems in Interior.....	....	1
Tex. 105—Consumer Problems in Textiles (or Household Textiles).....	....	3
Home Mgt. 150, 151—Management of the Home.....	3	3
Inst. Mgt. 160—Institutional Organization and Management.....	3	....
Inst. Mgt. 181—Institutional Purchasing and Accounting.....	....	3
Electives	2	....
Total	17	17
 <i>Senior Year</i>		
H. 5, 6—History of American Civilization.....	3	3
Home Mgt. 152—Practice in Management of the Home.....	....	3
Inst. Mgt. 182—Executive Housekeeping Management.....	3	....
Inst. Mgt. 183—Problems in Housekeeping Management.....	....	3
Psych. 5—Mental Hygiene.....	3	....
Clo. 129—Home Furnishings.....	3	....
Psych. 2—Applied Psychology.....	....	3
Electives	4	4
Total	16	16

Foods and Nutrition

The purpose of the Foods and Nutrition Curriculum is two-fold—to provide an education in this field for the individual's personal use or for use in promoting good health and happiness in the family group, and to provide training for professional use: in teaching, research, editorial or promotional work.

Sophomore Year

Eng. 3, 4—Composition and Readings in World Literature or.....	3	3
Eng. 5, 6—Composition and Readings, mainly in English Literature....	(3)	(3)
Chem. 11, 13—General Chemistry.....	3	3
Foods 2, 3—Foods	3	3
Zool. 16—Human Physiology	4	....
Psych. 1—Introduction to Psychology .....	....	3
Pr. Art 20—Costume Design .....	....	3
Clo. 20—Clothing Construction	3	....
Physical Activities	1	1
Total	17	16

<i>Junior Year</i>	<i>Semester</i>	
	<i>I</i>	<i>II</i>
Home Mgt. 150, 151—Management of the Home.....	3	3
Foods 100—Food Economics	2	....
Foods 101—Meal Service .....	....	2
Nut. 110—Nutrition	3	....
Nut. 112—Dietetics .....	....	3
Chem. 31, 32, 33, 34—Elements of Organic Chemistry.....	3	3
H. E. Ed. 110—Child Development.....	....	3
Physics 1, 2—Elements of Physics.....	3	3
Econ. 37—Fundamentals of Economics.....	3	....
Total	17	17
 <i>Senior Year</i>		
H. 5, 6—History of American Civilization.....	3	3
Home Mgt. 152—Practice in Management of the Home.....	....	3
Pr. Art 2—Survey of Art History.....	2	....
Pr. Art 140, 141—Interior Design.....	1	3
Bact. 51—Household Bacteriology .....	....	3
Nut. 111—Child Nutrition .....	....	2
Foods 102—Experimental Foods	3	....
Foods 103—Demonstrations	2	....
Foods 104—Advanced Foods .....	....	2
Chem. 81, 82—General Bio-Chemistry.....	4	....
Elective	2	....
Total	17	16

COURSE OFFERINGS

The University reserves the right to withdraw or discontinue any course for which an insufficient number of students have registered to warrant giving the course. In such an event, no fee will be charged for transfer to another course.

Courses are designated by numbers as follows:

1 to 99: courses for undergraduates.

100 to 199: courses for advanced undergraduates and graduates. (Not all courses numbered 100 to 199 may be taken for graduate credit.)

200 to 299: courses for graduates only.

A course with a single number extends through one semester. A course with a double number extends through two semesters.

Courses not otherwise designated are lecture courses. The number of hours' credit is shown by the arabic numeral in parentheses after the title of the course.

A separate schedule of courses is issued each semester, giving the hours, places of meeting, and other information required by the student in making out his program. Students obtain these schedules when they register.

FOODS AND NUTRITION*

Assistant Professors Neylan, Peers; Instructors Cornell, Hagel, Le Grand, Spencer and Tomberlin.

A. Foods

Foods 1. Introductory Foods (3)—First and second semesters. Three laboratory periods a week.

For students in other colleges and for majors in Crafts, Practical Art, Textiles and Clothing.

Foods 2, 3. Foods (3, 3)—First and second semesters. One lecture and two laboratory periods a week. Prerequisite, General Chemistry, Chem. 11, 13, to precede or parallel.

Composition, selection and preparation of food with a study of the scientific principles involved. Analysis of recipes and study of standard products.

Nut. 10. Elements of Nutrition (3)—First and second semesters.

For students in other colleges and for majors in Crafts, Practical Art, Textiles and Clothing.

For Advanced Undergraduates and Graduates

Foods 100. Food Economics (2)—First and second semesters. Prerequisite, Foods 1, or 2, 3. One lecture and one laboratory period a week.

Sources of our food supply; buying of food for the family.

* Tailored white uniforms are required for laboratory work in Foods 1, 2, 3, 101, 102, 103, 104, 105, 200, Nutrition 110, 111, 112.

Foods 101. Meal Service (2)—First and second semesters. Two laboratory periods a week. Prerequisite, Foods 1, or 2, 3.

Planning and serving meals for family groups considering nutritional needs, and cost; includes simple entertaining.

Foods 102. Experimental Foods (3)—First semester. One lecture and two laboratory periods a week. Prerequisites, Foods 2, 3; Organic Chemistry; Chem. 31, 32, 33, 34.

A study of food preparation processes from the experimental viewpoint.

Foods 103. Demonstrations (2)—First and second semesters. Two laboratory periods a week. Prerequisites, Clo. 20; Foods 1 or 2, 3; Pr. Art 20, Tex. 1.

Practice in demonstrations.

Foods 104. Advanced Foods (2)—Second semester. Two laboratory periods a week. Prerequisite, Foods 1 or 2, 3.

Advanced study of manipulation of food materials.

Foods 105. Foods of Other Countries (3)—Second semester. One lecture and two laboratory periods a week. Prerequisite, Foods 1 or 2, 3 or equivalent.

Food preparation and food customs of the peoples of other countries.

B. Nutrition

Nut. 110. Nutrition (3)—First semester. Prerequisite, Foods 2, 3; Organic Chemistry, Chem. 31, 32, 33, 34 to precede or parallel.

A scientific study of principles of human nutrition.

Nut. 111. Child Nutrition (2)—First and Second semesters. One lecture and one laboratory period a week. Prerequisite, Foods 1 or 2, 3, Nut. 10 or 110.

Principles of human nutrition applied to growth and development of children. Experience in a nursery school.

Nut. 112. Dietetics (3)—Second semester. One lecture and two laboratory periods a week. Prerequisite, Nut. 110.

A study of food selection for health; planning and calculating dietaries for children and adults; and methods of teaching food values.

Nut. 113. Diet and Disease (2)—First semester. Prerequisite, Nut. 110.

Modifications of the Principles of human nutrition to meet the dietary needs in treating certain diseases.

For Graduates

Foods 200. Advanced Experimental Foods (3-5)—Second semester. Two lectures, three laboratories.

Includes experimental problems, special emphasis on use of Maryland products.

Nut. 210. Readings in Nutrition (3)—First semester.

Reports and discussion of outstanding nutritional research and investigation.

Nut. 211. Problems in Nutrition (3-5)—Second semester.

Experience in a phase of nutrition research which is of interest to the student by the use of experimental animals, human studies, or an extensive and critical survey of the literature.

Nut. 212. Nutrition for Community Service (3)—First semester.

Applications of the principles of nutrition to various community problems. Students may work on problems of their own choosing.

Foods and Nut. 220. Seminar (1, 1)—One hour a week, first and second semesters.

Reports and discussions of current research in the fields of foods and nutrition.

Foods and Nut. 221. Research—Two lectures and 1 laboratory period a week. First and second semesters.

Investigation in some phase of foods or nutrition which may form the basis of a thesis.

HOME ECONOMICS—GENERAL

H. E. 1. Home Economics Lectures (1)—First semester. Required of Home Economics freshmen.

Lectures, demonstrations, group and individual discussions on grooming and clothing budget for the college girl; personal adjustments; good study habits; social usage.

H. E. 2. Home Economics for Men (3)—Second semester.

Selection and care of clothing, considering design, durability and propriety to occasion. Selection of food for better nutrition, interesting menus and economy; analysis of accepted demeanor for host and guest. Selection and repair of household appliances; family budgeting and family relationships.

HOME ECONOMICS EXTENSION

Professors Mount and Kellar

H. E. Ext. 100. Methods in Home Economics Extension (3)—Second semester.

Three lectures. Given in cooperation with the staff in Home Economics Extension. Students must have senior standing in the College of Home Economics.

HOME AND INSTITUTION MANAGEMENT

Professor Mount; Assistant Professor Crow; Instructors Burke and Tomberlin.

A. Home Management

Home Mgt. 150, 151. Management of the Home (3, 3)—First and second semesters.

The family and human relations; household organization and management; management of time, energy, and money; housing as a social problem; housing to meet family needs; selection and care of household equipment and furnishings.

Home Mgt. 152. Experience in Management of the Home (3)—First and second semesters. Prerequisite, Home Mgt. 150, 151.

Residence for one-third of a semester in the Home Management House. Experience in planning, guiding, directing, coordinating and participation in the activities of a household, composed of a faculty member and a small group of students.

B. Institution Management

Inst. Mgt. 160. Institution Organization and Management (3)—First semester. Two lectures and one laboratory period a week. Prerequisites, Foods 2, 3; Home Mgt. 150, 151 to precede or parallel.

The principles of scientific organization and management as applied to supervision of food services, and to housekeeping administration within an institution.

Inst. Mgt. 161. Institution Purchasing and Accounting (3)—Second semester. Two lectures and one laboratory period a week.

Purchasing of food, supplies, and equipment for institutional use, and the principles involved in accounting as applied to food services.

Inst. Mgt. 162. Institution Foods (3)—Second semester. One lecture and two laboratory periods a week. Prerequisites, Foods 2, 3; Inst. Mgt. 160, 161.

Practical experience in preparing and serving food for large groups, including the use of standard recipes, calculation of food costs, use of institution equipment, and menu planning.

Inst. Mgt. 163. Practice in Institution Management (3)—Arranged. Three laboratory periods a week. Prerequisites, Inst. Mgt. 160, 161.

Practice work in food service under supervision.

Inst. Mgt. 164. Advanced Institution Management (2)—Second semester. One lecture and one laboratory period a week. Prerequisites, Inst. Mgt. 160, 161, 162.

Special problems in institution management.

Inst. Mgt. 165. The School Lunch (3)—Second semester. Two lectures and one laboratory period a week. Prerequisites, Foods 2, 3; Nut. 110, or equivalent.

Problems relating to the planning, organization and serving of the noon meal in schools and in child care centers.

Inst. Mgt. 181. Purchasing and Accounting for Housekeeping Administration (3)—Second semester.

Purchasing of household textiles, furnishings, supplies and equipment for institutional use, and the principles involved in budgeting and accounting as applied to housekeeping administration.

Inst. Mgt. 182. Housekeeping Management (3)—First semester.

Principles concerning housekeeping management, floor plans, sanitation, safety, personnel and legal problems.

Inst. Mgt. 183. Problems in Housekeeping Management (3)—Second semester.

Special lectures and advanced problems in housekeeping administration.

HOME ECONOMICS EDUCATION*

For Advanced Undergraduates and Graduates

H. E. Ed. 101. Curriculum, Instruction, and Observation (3)—Second semester. Required of juniors in Home Economics Education. Prerequisite, Psych. 110.

The place and function of home economics education in the secondary school curriculum. Philosophy of education for home and family living; characteristics of adolescence, construction of source units, lesson plans, and evaluation devices; directed observations in junior and senior high school home economics departments.

H. E. Ed. 102.—Problems in Teaching Home Economics (3)—First semester. Required of seniors in Home Economics Education. Prerequisite, H. E. Ed. 101.

A study of the managerial aspects of teaching and administering a home-making program; the physical environment, organization and sequence of instructional units, resource materials, evaluation, home projects.

H. E. Ed. 103. Teaching Secondary School Vocational Homemaking (8)—First or second semester. Prerequisite, H. E. Ed. 101 and 102 or 102 parallel.

Observation and supervised teaching in approved secondary school home economics departments in Maryland and the District of Columbia. Ten weeks of practicum in two schools and with both junior and senior high school classes. Students must reserve a half day in their schedule for the student teaching assignment.

* For further information see College of Education bulletin.

H. E. Ed. 120. Evaluation of Home Economics (2)—Prerequisite, H. E. Ed. 101.

The meaning and function of evaluation in education; the development of a plan for evaluating a homemaking program with emphasis upon types of evaluation devices, their construction, and use.

H. E. Ed. 200. Seminar in Home Economics Education (2)—First semester.

TEXTILES AND CLOTHING

Associate Professor Mitchell; Assistant Professors Akin, Beaty, Wilbur; Instructors Friemel, Houston.

A. Textiles

Tex. 1. Textiles (3)—First and second semesters. Two lectures and one laboratory period a week.

Study of textile fibers; standardization and labeling of textiles; collection and analysis of fabrics.

B. Clothing

Clo. 20A. Clothing Construction (3)—First and second semesters. Prerequisite, Tex. 1. Three laboratory periods a week.

Interpretation and use of commercial patterns; basic fitting and construction techniques.

Clo. 20B. Clothing Construction (3)—First and second semesters. Elective for students in other colleges. Three laboratory periods a week.

Interpretation and use of commercial patterns; fabric study; basic fitting and construction techniques.

Clo. 21. Personal Problems in Clothing (2)—First semester.

Care of clothing; wardrobe planning; selection and purchase of accessories and ready-to-wear.

Clo. 22. Clothing Construction (2)—First and second semesters. Two laboratory periods a week.

Continuation of Clo. 20a or 20b. Construction of garments, including a renovation problem.

Courses for Advanced Undergraduates and Graduates

Tex. 100. Advanced Textiles (3)—Second semester. One lecture and two laboratory periods a week. Prerequisite, Tex. 1.

Study of physical and chemical properties of fibres. Standard testing methods for serviceability of fabrics, i. e., tensile strength, elongation, resistance to abrasion, tear resistance, launderability, flammability, thickness, resilience and specific weight.

Tex. 101. Problems in Textiles (3)—First semester. One lecture and two laboratory periods a week. Prerequisites: Tex. 100, Organic Chemistry. Individual experimental problems in textiles.

Tex. 102. Textile Testing (3)—First semester. Three laboratory periods a week. Prerequisite, Tex. 100.

The theory of textile testing methods, the repeated use of physical testing apparatus, the interpretation of the data, and the presentation of the findings.

Tex. 103. Textile Microscopy (3)—Second semester. Three laboratory periods a week. Prerequisite, Tex. 101.

Application of optical and microscopical equipment to technical analysis of textiles. Lectures and laboratory concerning the types of equipment, their use, and the technique of textile microanalysis for fiber, yarn and fabric. Opportunity for work on fibre cross sectioning. Projects involving quantitative determinations, development of technique, application of photomicrography; swelling techniques, staining, etc., as applied to textile microscopy.

Tex. 105. Consumer Problems in Textiles (3)—First and second semesters. Two lectures and one laboratory period a week. Prerequisite, Tex. 1 or equivalent.

Economic and trade conditions that affect consumer-trade relationships; buying guides for purchase of household linens and clothing; performance tests of fabrics.

Tex. 106. Household Textiles (3)—First semester. Three laboratory periods a week. Prerequisite, Tex. 1.

Study of textiles for household and institutional use. Evaluation of such textile products through lectures, laboratory tests, survey of literature and field trips.

Tex. 108. Decorative Fabrics (2)—Second semester. One lecture and one laboratory period a week.

Study of historic and contemporary fabrics and laces.

Clo. 120. Draping (3)—First and second semesters. Three laboratory periods a week. Prerequisites, Tex. 1, Clo. 22.

Demonstrations and practice in creating costumes in fabrics on individual dress forms; modeling of garments for class criticism.

Clo. 121. Pattern Design (2)—Second semester. Two laboratory periods a week. Prerequisites, Clo. 22, Pr. Art 20.

Development and use of a basic pattern in dress making.

Clo. 122, 125. Tailoring (2, 2)—First and second semesters. Two laboratory periods a week. Prerequisite, Clo. 22.

Construction of tailored garments requiring professional skill.

Clo. 123. Children's Clothing (2)—First and second semesters. Two laboratory periods a week. Prerequisite, Clo. 20a or b, or equivalent.

Children's clothing from the standpoint of age, health, beauty, economy and personality; development of original designs.

Clo. 124. Projects and Reading in Textiles and Clothing (2)—Second semester. Prerequisite, Clo. 22, Tex. 100.

Study of the reasons for dress and the versatility of fabrics; analysis of wardrobe planning preparatory to the job situation; grooming as related to the college girl—to the job holder; survey of job opportunities in the field; one special project.

Clo. 126. Fundamentals of Fashion (2, 3)—Second semester. Prerequisite, Clo. 120.

Fashion history; current fashions, how to interpret and evaluate them; fashion show techniques; fashion promotion. The course includes oral and written reports, group projects, panel discussions and field trips.

Clo. 127. Apparel Design (3)—Second semester. One lecture and two laboratory periods a week. Prerequisite, Clo. 120.

The art of costuming; trade and custom methods of clothing design and construction; original designing on a dress form.

Clo. 128. Home Furnishings (3)—Second semester. Three laboratory periods a week. Prerequisite, Tex. 1, Clo. 20A or 20B, or consent of instructor.

Selection of fabrics for home and institutional furnishings; care and repair of such furnishings; custom construction of slip covers, draperies, bedspreads, etc.

For Graduates

Tex. 200. Special Studies in Textiles (2-4)

Clo. 220. Special Studies in Clothing (2-4)

Tex. and Clo. 230. Seminar (1, 1)

Tex. and Clo. 231. Research

Tex. and Clo. 232. Economics of Clothing and Textiles (3)

PRACTICAL ART AND CRAFTS

Professor Curtiss; Assistant Professors Cuneo, Lawson; Instructors Cassels, Brown, Davis, Palmer, and Young.

The Department of Practical Art reserves the right to retain one art problem, from each student, from each class, for illustrative purposes; however, it will retain only such problems as are needed by the department.

Pr. Art. 0. Professional Lectures (0)—Second semester.

Lectures by current merchandisers and designers.

A. Practical Art

Pr. Art 1. Design (3)—First and second semesters.

Art expression through the use of materials, such as opaque water color, wet clay, colored chalk, and lithograph crayon, which are conducive to free techniques. Elementary lettering, action figures, abstract design and general composition study. Consideration of art as applied to daily living. Teaching methods are emphasized in the section for art education students.

Pr. Art 2. Survey of Art History (2)—First and second semesters.

A rapid survey of art, from prehistoric times to the twentieth century, showing the great human movements and art ideals, which each period has reflected. Emphasis is given to domestic architecture, furnishings, and costume, and to the philosophy and significance of art in today's living. Illustrated lectures; assigned readings, examinations.

Pr. Art 3. Creative Art Inspired by Primitive Art (2)—First semester. Two laboratory periods a week.

Modern design produced after the study of vigorous primitive art as found in the prehistoric art of Spain, France, and the Southwestern part of the United States; archaic Mesopotamia, Egypt, and Greece; Mayan, Aztec, and Peruvian cultures; past and present primitive tribes; provincial and peasant groups.

Pr. Art 4. Three-dimensional Design (2)—Second semester. Two laboratory periods a week.

Abstract and symbolic design emphasizing mass, volume, and depth in construction problems, which utilize paper, cork, screen, wire, thin sheet metal, fabric, wood, plastics, etc. This course stimulates resourcefulness and imagination in design; it is especially valuable to persons interested in display.

Pr. Art 20. Costume Design (3)—First and second semesters. Three laboratory periods a week. Prerequisite, Pr. Art 1, or equivalent.

Clothing selection with relation to personality. Adaptation of changing fashions to the individual. Designing of costumes in mediums, such as Conte and lithograph crayon, transparent and opaque water color, soft pencil, India ink, and three-dimensional materials. A minimum of fashion figure drawing. Survey of historic costume and of the fashion industry.

Pr. Art. 21, 22. Action Drawing (2, 2)—Second semester. Two laboratory periods a week. Prerequisite, Pr. Art 1, or equivalent.

Quick sketching of live model, from poses and action. This course is basic for costume illustration and mural painting. Pr. Art 21 prerequisite to Pr. Art 22.

Pr. Art 30. Typography and Lettering (3)—First and Second semesters. Prerequisite, Pr. Art 1, or equivalent.

A study of typography, hand lettering, and their application. Brief survey of processes of reproduction.

Pr. Art 38, 39. Photography (2, 2)—First and second semesters. Three laboratory periods a week. Consent of the instructor.

Experimental effects in photography with special emphasis upon pictures for advertisements, store display, periodicals, murals and salon exhibits. Each student must have his own camera.

B. Crafts

Cr. 2, 3. Simple Crafts (2, 2)—First and second semesters. Two laboratory periods a week.

Creative art expressed in clay modeling, plaster carving, wood burning, thin metal working, paper mache modeling, etc. Emphasis is laid upon inexpensive materials and tools and simple techniques, which can be pursued in the home. Excellent for teachers and directors of recreation centers.

Cr. 5, 6. Puppetry (2, 2)—Second semester. Two laboratory periods a week.

Making of marionettes and production of simple puppet shows. Valuable to teachers and directors of recreation centers.

Cr. 20, 21. Ceramics (2, 2)—First and second semesters. Three laboratory periods a week. Prerequisite, Pr. Art 1 or Cr. 2, if possible.

Elementary pottery-making, modeling in relief, intaglio and in the round, simple glaze effects. Good design is stressed.

Cr. 30, 31. Metalry (2, 2)—First and second semesters. Three laboratory periods a week. Prerequisite, Pr. Art 1, or Cr. 2, if possible.

Etching, repousse, and sawed filigree in metals, such as copper, aluminum, brass, pewter and German silver. Good design is stressed.

Cr. 40, 41. Weaving (2, 2)—First and second semesters. Three laboratory periods a week. Prerequisite, Pr. Art 1, if possible.

Hand weaving on simple looms. Good color, texture, and general design are stressed.

Courses for Advanced Undergraduates and Graduates

Pr. Art 100, 101. Mural Design (2, 2)—First semester. Two laboratory periods a week. Prerequisites, Pr. Art 1, 2, 3, 21, or consent of the instructor.

Consideration of mural design with relation to propriety of setting. Study of traditional and contemporary techniques. Experiment in colored chalk, gouash, oil paint, and fresco; stone, glass, and tile mosaic.

Pr. Art 102, 103. Advanced Mural Design (2, 2)—First semester. Two laboratory periods a week. Prerequisites, Pr. Art 1, 2, 3, 21, 100, 101.

Advanced techniques in mural design.

Pr. Art 120, 121—Costume Illustration (2, 2)—First and second semesters. Two laboratory periods a week. Prerequisites, Pr. Art 1, 20, and 21, 22, if possible.

Advanced techniques in rendering of fashion illustration. Experience in use of Ben Day and Craftint. Organization of fashion shows.

Pr. Art 124, 125. Individual Problems in Costume (2, 2)—First and second semesters. Two laboratory periods a week. Prerequisites, Pr. Art 1, 20, 120, 121, and permission of the instructor.

Advanced problems in costume design or costume illustration for students who are capable of independent work.

Pr. Art 132. Advertising Layout (2)—First and second semesters. Two laboratory periods a week. Prerequisites, Pr. Art 1, 20, 30, and 20, 21 if possible.

Rough layouts and finished advertisements utilizing lettering, type specifications, and illustration. Air brush used in large work.

Pr. Art 134, 135. Individual Problems in Advertising (2, 2)—Second semester. Two laboratory periods a week. Prerequisites, Pr. Art 1, 20, 30, 120, 132, or equivalent, and permission of the instructor.

Advanced problems in advertising for students who are capable of independent work.

Pr. Art 136. Merchandise Display (2)—First and second semesters. Two laboratory periods a week. Prerequisites, Pr. Art 1, 20, 30; 120, 132 to precede or parallel.

Practice in effective display of merchandise. Cooperation with retail establishments.

Pr. Art 137. Advanced Merchandise Display (2)—First and second semesters. Two laboratory periods a week. Prerequisites, Pr. Art 1, 20, 30, 120, 132, 136 and permission of the instructor.

Advanced problems in the display of merchandise. Emphasis upon original atmospheric effects, which are within the bounds of good taste.

Pr. Art 138, 139. Advanced Photography (2, 2)—First and second semesters. Three laboratory periods a week. Prerequisites, Pr. Art 38, 39.

Advanced problems in photography. Each student must have his own camera.

Pr. Art 140, 141. Interior Design (1, 3)—First semester, one laboratory per week; second semester, three laboratory periods per week. Prerequisites, Pr. Art 1, 2, to precede or parallel Pr. Art 140.

Analysis of interiors as backgrounds for various personalities. Study of good and poor interiors. Trips to historic homes, a furniture factory, and retail house furnishing establishments. Original floor plans and wall elevations drawn to scale and rendered in color.

Pr. Art 142, 143. Advanced Interior Design (2, 2)—First and second semesters. Two laboratory periods a week. Prerequisites, Pr. Art 1, 140, 141, or equivalent.

Designing of rooms and furnishings; scale drawing and color rendering in plan, elevation and perspective, or making of maquettes. Study of furniture manufacture and merchandising. Planning of exhibition rooms or houses when possible.

Pr. Art 144, 145. Individual Problems in Interior (2, 2)—First and second semesters. Two laboratory periods a week. Prerequisites, Pr. Art 1, 140, 141, 142, 143, and permission of the instructor.

Advanced problems in interior design or construction for students who are capable of independent work.

Pr. Art 198. Store Experience (3)—160 clock hours, or 20 continuous eight-hour days, summer following the Junior Year, Practical Art curriculum.

Selling, buying, advertising, or executive work, done under supervision in a specified department store or studio. Arrangements to be made with the Head of the Department of Practical Art early in the spring semester, Junior year.

Cr. 120, 121. Advanced Ceramics (2, 2)—First and second semesters. Three laboratory periods a week. Prerequisites, Cr. 20, 21.

Advanced techniques in ceramics; preparation of glazes and handling of the kiln.

Cr. 124, 125. Individual Problems in Ceramics (2, 2)—First and second semesters. Three laboratory periods a week. Prerequisites, Cr. 20, 21, 120, 121, and permission of the instructor.

Advanced problems in ceramics. For students who are capable of independent work.

Cr. 130, 131. Advanced Metalry (2, 2)—First and second semesters. Three laboratory periods a week. Prerequisite, Cr. 30, 31.

Advanced techniques in metalry, including soldering, stone-setting, and fine etching.

Cr. 134, 135. Individual Problems in Metalry (2, 2)—First and second semesters. Three laboratory periods a week. Prerequisites, Cr. 30, 31, 130, 131, and permission of the instructor.

Advanced problems in Metalry for students who are capable of independent work.

Cr. 140, 141. Advanced Weaving (2, 2)—First and second semesters. Three laboratory periods a week. Prerequisites, Cr. 40, 41.

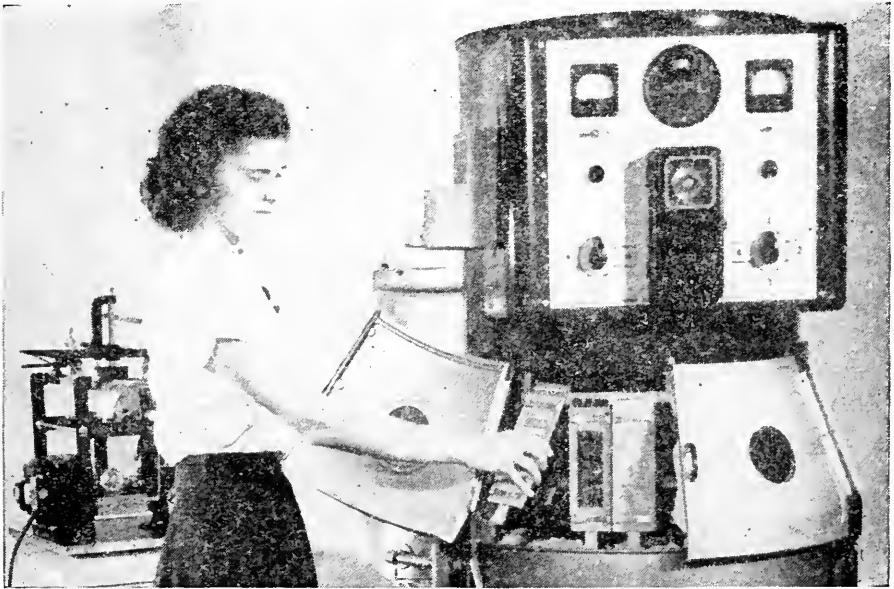
Advanced techniques in weaving.

Cr. 144, 145. Individual Problems in Weaving (2, 2)—First and second semesters. Three laboratory periods a week. Prerequisites, Cr. 40, 41, 140, 141, and permission of the instructor.

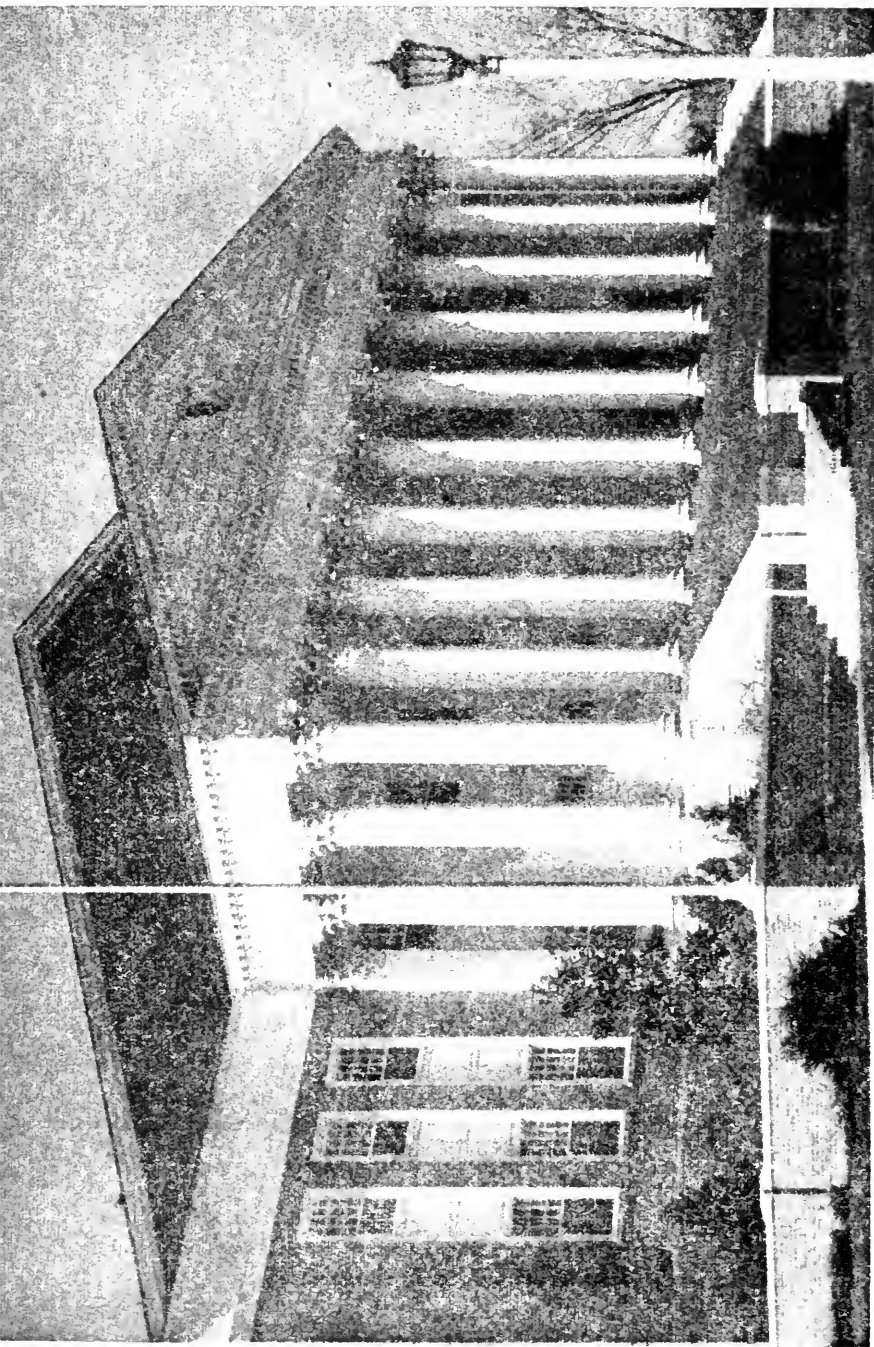
Advanced problems in weaving for students who are capable of independent work.

Cr. 198. Crafts in Therapy (2)—Second semester. Prerequisites, three courses in various crafts or art construction, consent of the instructor and junior standing.

Demonstration and discussion of the teaching of crafts to persons, who need physical and mental rehabilitation. Readings, field trips, a minimum of art activity. Excellent for persons who plan to work with disabled persons.



Testing fabrics on fadometer



Armory, University of Maryland
Headquarters of College of Military Science, Physical Education and Recreation

College of
MILITARY SCIENCE
PHYSICAL EDUCATION and RECREATION

STAFF

Colonel Harland C. Griswold, U. S. Army (Ret.), Acting Dean

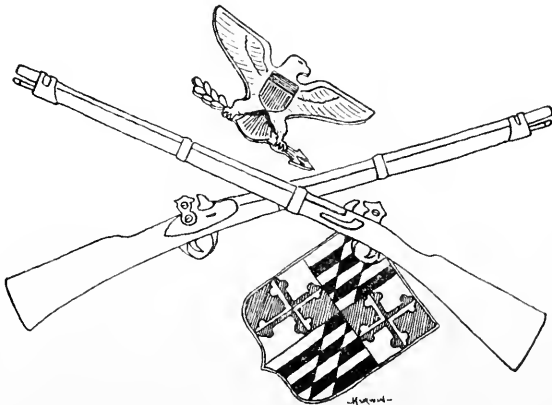
MILITARY STAFF

- COLONEL CLAUD E. STADTMAN, Professor, Military Science and Tactics.
LT. COLONEL GEORGE E. FLETCHER, Assistant Professor, Military Science and Tactics (Infantry).
LT. COLONEL SIDNEY S. DAVIS, Assistant Professor, Military Science and Tactics (Signal Corps).
LT. COLONEL FREDERICK H. RICHARDSON, JR., Assistant Professor, Military Science and Tactics (Dental Corps) (Baltimore College of Dental Surgery).
LT. COLONEL HAROLD V. MAULL, Assistant Professor of Military Science and Tactics (Air).
MAJOR OVIE D. CLARK, Assistant Professor, Military Science and Tactics (Air).
MAJOR EMMETTE G. HUFF, Assistant Professor, Military Science and Tactics (Infantry).
MAJOR JAMES S. HOLLINGSWORTH, Assistant Professor, Military Science and Tactics (Transportation Corps).
MAJOR PHILIP A. HUTCHINSON, Assistant Professor, Military Science and Tactics (Transportation Corps).
LT. COLONEL DONALD O. MARKHAM, Assistant Professor, Military Science and Tactics (Transportation Corps).
MAJOR WALTER L. MILLER, JR., Assistant Professor, Military Science and Tactics (Infantry).
MAJOR ROY M. KESSLER, Assistant Professor, Military Science and Tactics (Infantry).
CAPTAIN JOHN H. BROWN, Assistant Professor, Military Science and Tactics (Air).
CAPTAIN DAVID M. CHASE, Assistant Professor, Military Science and Tactics (Infantry).
CAPTAIN LEE R. COX, Assistant Professor, Military Science and Tactics (Infantry).
CAPTAIN OMER L. COX, Assistant Professor, Military Science and Tactics (Air).
CAPTAIN EARL L. HARPER, Assistant Professor, Military Science and Tactics (Infantry).

- CAPTAIN ROLAND P. LEE, Assistant Professor, Military Science and Tactics (Signal Corps).
- CAPTAIN PHIL M. PATTON, Assistant Professor, Military Science and Tactics (Air).
- FIRST LIEUTENANT KENNETH W. KAGY, Assistant Professor, Military Science and Tactics (Air).
- FIRST LIEUTENANT TROY H. MIDDLETON, JR., Assistant Professor, Military Science and Tactics (Infantry).
- FIRST LIEUTENANT MYRON S. MYERS, Assistant Professor, Military Science and Tactics (Signal Corps).
- MASTER SERGEANT JAMES J. AYLWARD, JR., Administrative Assistant.
- MASTER SERGEANT WILLIAM BUCKLEY, Instructor (Signal Corps).
- MASTER SERGEANT PAUL W. CUNZEMAN, Instructor (Infantry).
- MASTER SERGEANT CHARLES N. DODSON, Instructor (Infantry).
- MASTER SERGEANT STEPHEN FELBER, Instructor (Infantry).
- MASTER SERGEANT EVERETT B. HEINS, Instructor (Transportation Corps).
- MASTER SERGEANT LEO HIRSCH, Administrative Assistant (Dental Corps) (Baltimore College of Dental Surgery).
- MASTER SERGEANT NORBERT S. KUCHMAN, Administrative Assistant.
- MASTER SERGEANT ROBERT J. MCFARLAND, Instructor (Air).
- MASTER SERGEANT WILLIAM E. ATTICK, Instructor (Infantry).
- MASTER SERGEANT BILLY GRAY, Instructor (Infantry).
- MASTER SERGEANT THOMAS H. LAUGHREN, Instructor (Infantry).
- MASTER SERGEANT EARL E. MUSGROVE, Instructor (Infantry).
- MASTER SERGEANT HUBERT W. SECREST, Instructor (Infantry).
- MASTER SERGEANT FAY J. NORRIS, Instructor (Infantry).
- FIRST SERGEANT CHARLES LIGHTNER, Administrative Assistant (Air).
- SERGEANT FIRST CLASS JOHN C. CROUSE, JR., Instructor (Infantry).
- SERGEANT FIRST CLASS SALVATORE GAGLIEMO, Instructor (Infantry).
- SERGEANT FIRST CLASS HARRY H. PEIRCE, Instructor (Signal Corps).
- SERGEANT FIRST CLASS EDWARD W MOSS, Instructor (Infantry).
- STAFF SERGEANT GEORGE A. FOELKER, Administrative Assistant (Air).
- STAFF SERGEANT JOSEPH J. SWICARZ, Instructor (Air).
- SERGEANT VERN M. HOSTBJOR, Administrative Assistant.
- SERGEANT DONALD E. WINTER, Instructor (Infantry).
- CORPORAL MARRION E. FROST, JR., Administrative Assistant (Transportation Corps).
- PRIVATE FIRST CLASS EDWARD E. WELBORN, Administrative Assistant (Transportation Corps).
- MCKINLEY L. FULLER, Military Property Custodian.
- MRS. ANITA J. O'CONNOR, Secretary.
- MRS. VIVIEN D. EDWARDS, Assistant Secretary.
- FRANK SYKORA, Assistant Professor, Bandmaster.

PHYSICAL EDUCATION, HEALTH AND RECREATION STAFF

- RUTH ALEXANDER, M.A., Assistant Professor of Physical Education.
 SAMUEL J. ARBES, Instructor in Physical Education.
 HARRY BONK, B.S., Instructor in Physical Education.
 LOUIS R. BURNETT, M.D., Professor of Physical Education, Head of Department.
 FRANK H. CRONIN, B.S., Assistant Professor of Physical Education.
 JOHN H. CUDMORE, B.S., Instructor in Physical Education.
 DOROTHY F. DEACH, M.S., Professor of Physical Education, Head of Department for Women.
 DAVID A. FIELD, B.S., Assistant Professor of Physical Education.
 ELIZABETH I. FLINCHBAUGH, M.A., Instructor in Physical Education.
 WARREN K. GIESE, B.S., Instructor in Physical Education.
 GEORGE M. GLOSS, Ed.D., Professor of Physical Education.
 LOUIS E. HUTTO, Ph.D., Professor of Physical Education.
 JAMES H. KEHOE, B.S., Associate Professor of Physical Education.
 WILLIAM E. KROUSE, B.S., Instructor in Physical Education.
 DOROTHY G. MADDEN, M.A., Instructor in Physical Education.
 HARVEY L. MILLER, Colonel, U.S.M.C. (Ret.), Associate Professor of Physical Education.
 VIOLA MITCHELL, M.A., Assistant Professor of Physical Education.
 DORIS M. NEYENDORF, B.S., Instructor in Physical Education.
 JACQUELINE M. RICHARDS, B.S., Instructor in Physical Education.
 ADELAIDE ROSS, M.A., Assistant Professor of Physical Education.
 H. BURTON SHIPLEY, B.S., Associate Professor of Physical Education.
 EDWARD J. SCHWARZ, B.S., Instructor in Physical Education
 CATHERINE SNELL, M.A., Assistant Professor of Physical Education.
 ALFRED L. STEWART, M.S., Associate Professor of Physical Education.
 THERON A. TOMPKINS, M.A., Associate Professor of Physical Education.
 ALBERT W. WOODS, B.S., Associate Professor of Physical Education.
 ALFRED J. WYRE, Assistant Professor of Physical Education.
 R. YVONNE ZENN, M.A., Assistant Professor of Physical Education.



**COLLEGE OF
MILITARY SCIENCE, PHYSICAL EDUCATION,
AND RECREATION**

COL. HARLAND C. GRISWOLD, U. S. Army, Retired, Acting Dean

The College of Military Science, Physical Education and Recreation, has been established to provide leaders for the Nation and State in the fields of Military Science, Physical Education, Recreation and Health Education. Work is given in each of these four fields leading to a Bachelor's Degree and students with majors in other colleges may elect to take minors in these subjects. The length of the normal curriculum for each area of study is four years.

The college is divided into three main departments, as follows: Military Science; Reserve Officers' Training Corps; and Physical Education, Recreation and Health Education. The work of each of these departments is described in detail under the appropriate heading.

MILITARY SCIENCE

The primary purpose of the curriculum in Military Science is to train men who desire to follow a military career. It leads to a commission in the Officers' Reserve Corps with an opportunity for a subsequent active duty tour in a competitive status for a Regular Army commission. Leaders of the Armed Services have indicated that civilian colleges are expected to furnish about two-thirds of the junior officers needed each year as attrition replacements. This means that 1,000 to 1,500 graduates of civilian colleges each year will have the opportunity to secure commissions as regular officers in the Armed Services.

Students must be able to meet the physical standards established for the Officers' Reserve Corps and must maintain a scholastic average of not less than 2.0 in order to qualify for admission to the Advanced ROTC Course.

It will be noted that this curriculum provides for a minor in a field selected by the student. The number of hours in this minor is 24, of which at least 6 hours must be in courses No. 100 and above and must be approved by the department in which the work is given as well as by the Dean of this college.

Military Science Curriculum

Freshman Year

—Semester—

	I	II
Eng. 1, 2—Composition and Reading in American Literature.....	3	3
Soc. 1—Sociology of American Life.....	.....	3
G. & P. 1—American Government.....	3	....
Speech 1, 2—Public Speaking.....	2	2
Math. 10, 11—Algebra, Trigonometry, Analytic Geometry.....	3	3
Modern Language (one language for two years' study).....	3	3
*M. S. 1, 2—Basic R. O. T. C.....	3	3
*Physical Activities	1	1
Total	18	18

* Credit allowed for equivalent service in the Armed Forces.

<i>Sophomore Year</i>	— Semester —	
	I	II
Eng. 3, 4 or 5, 6—Composition and Reading in World Literature.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
Speech 5, 6—Advanced Public Speaking.....	2	2
Physics 1, 2—Elements of Physics.....	3	3
Modern Language	3	3
*M. S. 3, 4—Basic R. O. T. C.....	3	3
*Physical Activities	1	1
Total	18	18
<i>Junior Year</i>		
†Speech 127, 128—Military Speech and Command.....	2	2
Agr. Eng. 102—Gas Engines, Tractors and Automobiles.....	3	3
Econ. 37—Fundamentals of Economics.....	3	....
‡{Surv. 1, 2—Plane Surveying.....	2	2
‡{Dr. 1—Engineering Drawing	2	....
†M. S. 101, 102—Advanced R. O. T. C.....	3	3
Minor Sequence	6	6
Total	18	16

Students entered in Advanced R.O.T.C. are required to attend six weeks summer camp between Junior and Senior years.

Senior Year

G. & P. 101—International Political Relations, or.....	}	3	....
G. & P. 102—International Law, or.....			
G. & P. 106—American Foreign Relations.....			
M. S. 151—Military Logistics .....	....	3	3
†M. S. 152—Military Leadership .....	....	3	3
M. S. 153—Policy of the United States.....	3	....	....
†M. S. 103, 104—Advanced R. O. T. C.....	3	3	3
Minor Sequence	6	6	6
Total	15	15	15

THE RESERVE OFFICERS' TRAINING CORPS

Instruction in military science and tactics has been an important phase of the College Park division of the University of Maryland since 1856. In 1864 the General Assembly of Maryland accepted the provision of the Act of Congress of 1862 whereby public lands were donated to the States providing colleges in which a course of military training was maintained. Until 1916 the institution was a military school. After the first World War the military training was reorganized and given as specified in the Acts of Congress of 1916 and 1920, as amended, which are commonly known as the

* Credit allowed for equivalent service in the Armed Forces.

† Credit allowed to those holding Regular, Reserve or National Guard commissions.

‡ Officers experienced in terrain evaluation and sketching may elect other appropriate subjects by arrangement in lieu of Surv. 1, 2, and Dr. 1.

National Defense Acts. Under these laws the Reserve Officer Training Corps is organized to provide basic training and to offer advanced training leading to a commission in the Officer Reserve Corps on a selective basis. All male students, unless specifically exempted, under University rules are required to take basic military training for a period of two years. This is a prerequisite for graduation and must be taken by all eligible students in their first two years of attendance whether they intend to graduate or not. Students of the University, regardless of the college in which registered, who successfully complete the Basic Course Reserve Officers Training Corps may be considered as candidates for the Advanced Course.

The mission of the Senior Division, Reserve Officers' Training Corps is to produce junior officers who have the qualities and attributes essential to their progressive and continued development as officers in a component of the Army and Air Force of the United States. The major mission is the training of officers to serve with the Reserve Components of the Army and Air Force of the United States, i.e., the Organized Reserve Corps or the National Guard. In addition, the Senior Reserve Officers Training Corps will provide the principal source of procurement of junior officers for the Regular Army and Air Force through selection of a required number of Distinguished Military Graduates of the Senior Division for direct appointment, and through extended active duty tours of volunteer officers from which will be selected additional personnel for Regular Army appointment. The hundreds of Maryland graduates who received their commissions through this unit were found ready and capable when the national crisis arose, and they have achieved an inspiring and enviable record of which the State may well be proud.

Army and Air Force personnel, approved by the President of the University, are detailed by the Departments of the Army and Air Force to administer the course. Officers serve under appointment by the University as Professor or Assistant Professor and selected non-commissioned officers as Instructors.

The required course of two years is known as the First and Second Year Basic Course. This is a thorough, comprehensive course designed to prepare men for any branch of the service. The elective two-year Advanced Course in Air Force, Infantry, Signal Corps, Transportation Corps and Dental Corps specifically trains students in their selected specialization. Applicants for the Advanced Course Signal Corps must be registered for Mechanical or Electrical Engineering, Electronics, or a course leading to a major in physics; however, students enrolled in courses other than these may be admitted as a second priority.

The necessary training equipment including uniforms, weapons, and technical material, is loaned to the University by the Departments of the Army and Air Force. Students in the basic courses are loaned uniforms without cost.

The New Armory located East of the Administration Building has been declared by a Department of the Army inspector to be one of the finest buildings used for Military instruction in the country. It contains clothing and ordnance storerooms, class rooms, offices, projection room, a ten firing point small bore range, and a drill floor 240 feet long by 120 feet wide. Drill field, parade grounds and other outdoor training activities are nearby.

Advanced Course

The primary object of the Advanced Course is to provide military instruction and systematic training to selected eligible students through the agency of educational institutions, to the end that they may qualify as reserve officers in the Military forces of the United States. It is intended to attain this objective in accordance with the terms of the contract during the time the students are pursuing their academic studies at the University.

A student prior to enrollment in the course must have satisfactorily completed the Basic Course or have been honorably discharged after at least one year active service in one of the armed forces. The student must have indicated in writing his desire to undertake the course. Selection of students in the advanced course will be made by the President of the University and the Professor of Military Science and Tactics, as provided in Section 47c, National Defense Act. No applicant will be admitted to the advanced course who is less than eighteen or more than twenty-six years of age at the time of admission or who is not able to pass physical standards set forth in AR 40-105 and 40-110 and the Army General Classification Test with a qualifying score. Opportunities for students interested in the Regular Army and Air Force as a career have been augmented by recent legislation authorizing increased numbers of regular commissions to distinguished Reserve Officers' Training Corps graduates, and one-year active duty competitive tours to all Advanced Course graduates.

Program of Instruction

For first and second years, basic course, and the advanced course the instruction will consist of five hours per week, of which at least three hours are utilized for theoretical instruction.

Uniforms

All members must appear in proper uniforms at all Military drill formations and at such other times as the Military Department may designate.

Uniforms for students in the elementary course are furnished by the Government. The uniforms are the regulation uniforms of the United States Army and Air Force, with certain distinguishing features. Such uniforms must be kept in good condition by the students. They remain the property of the Army or Air Force, and though intended primarily for use in connection with military instruction they may be worn at other times unless the Military Department instructs otherwise. The uniforms will not

be worn in part nor used while the wearer is engaged in athletic sports. A basic uniform will be returned to the Military Department at the end of the year; or before, if a student severs his connection with the Department.

The Advanced Course students will wear an officer-type uniform, purchased on a Federal Government allowance.

Commutation

All members of the Advanced Course will receive a monetary allowance in lieu of subsistence, equivalent to the current value of the garrison ration, to be paid monthly during the periods of enrollment in the Advanced Course less the period of the Advanced Camp of six weeks. During this Camp the student will receive the pay of the seventh enlisted grade and travel pay. The total period of receiving commutation will not exceed 570 days for any student. This allowance will be paid in addition to benefits authorized by the GI Bill of Rights.

Credits

Military instruction at this Institution is on a par with other university work, and the requirements of this department as to proficiency are the same as those of other departments.

Students who have received Military Training at any educational institution under the direction of officers detailed as Professor of Military Science and Tactics, may receive such credit as the P. M. S. & T. and the President may jointly determine.

University and Reserve Officers' Training Corps Bands

The University of Maryland Student Band and the Reserve Officers' Training Corps Band are two separate musical organizations at the University, existing for the purpose of furthering the musical knowledge of interested students. The Reserve Officers' Training Corps Band functions under the Military Department. The Student Band is under the direction of the Music Department and is assisted by the Military Department. The instruction of both bands is conducted by an experienced bandmaster.

The Reserve Officers' Training Corps Band is composed of Reserve Officers' Training Corps students. It practices during drill periods and plays for drills and military formations. Uniforms and instruments are furnished by the Federal Government. Members of the Reserve Officers' Training Corps Band are eligible for enrollment in the Student Band.

The University of Maryland Student Band is one of the most important and most active undergraduate organizations on the Maryland Campus. Membership in the Student Band is open to all interested men and women students of the University. The Band furnishes music for athletic events and special occasions during the School Year. The Fall practice sessions are devoted to the support of the football season, with the band accompany-

ing the football team on some of its trips away from home. During the Winter season the Band plays for basketball games and for boxing matches. The practice hours during the Winter are devoted to concert music which culminates in an Annual Spring Concert.

Band is a regular scheduled course of instruction. One credit per semester, not to exceed a total of eight (8) credits, may be earned by the student participating in this activity. Uniforms and certain instruments are furnished by the University. Band rehearsals are conducted in the Band Room in the New Armory. A band letter may be earned each year by faithful attendance. A gold award is presented to the student who earns a letter for four successive years. Students may be elected to positions of honor and responsibility within this student organization which operates under its own constitution.

Men or women, applying for admission to the University who play musical instruments and who desire to be considered for the Student Band, should indicate their experience and ability on their application form, and should contact the bandmaster at the earliest opportunity for enrollment in the Student Band, after being accepted for admission to the University.

The Varsity Rifle Team

The Varsity Rifle Team is under the supervision of the Military Department. Rifle competition at the University of Maryland is rated as a major sport activity, and the varsity letters and sweaters are awarded each year to team members. The rifle teams representing this institution have a high national standing as they have consistently placed in the top brackets in the National Intercollegiate Rifle Match. The Varsity Rifle Team won the National Intercollegiate Championship in 1947 with a new record score. They have been consistent winners in the William Randolph Hearst Trophy Match and the Third Service Command Reserve Officers' Training Corps Match as well as winning a very high percentage of the regular schedule of postal and shoulder matches. Rifle and ammunition are furnished by the State and Federal Governments and the rifle range in the New Armory used by the team has been pronounced by officials of the National Rifle Association to be one of the finest in the country.

Both a Varsity Team and a Freshman Team are placed in competition, with members of the latter team being awarded class numerals.

PHYSICAL EDUCATION, HEALTH AND RECREATION

The weakening influence of our modern machine civilization makes essential a progressive course, especially designed to condition and develop the human body to the point where it can retain normal responses to stimuli in spite of fatigue and exhaustion and continue to function effectively in the routine and emergency tasks of life.

The primary purposes of the offerings in Physical Education, Health and Recreation are: (a) conducting the required classes in physical edu-

cation taken three periods weekly by freshmen and sophomores; (b) organizing and conducting the intramural program of individual and team sports; (c) organizing and conducting pageants, dances, and gymnastic exhibitions; (d) conducting adaptive or corrective exercises for physically handicapped students; (e) promoting the proper use of leisure time by organizing wholesome recreation for the students and faculty; (f) conducting major courses for the education of teachers and leaders in Physical Education, Health, Recreation, and Pre-Physical Therapy.

The curricula in Physical Education, Health, Recreation, and Pre-Physical Therapy function through a cooperative arrangement among the following: (1) The College of Military Science, Physical Education, and Recreation—required class work including adaptive courses for freshmen and sophomores, intramurals, and major and minor curricula; (2) College of Education—professional preparation of teachers; (3) Graduate School—graduate professional preparation.

Facilities

The University of Maryland has several athletic fields, a large armory which is also used for recreation purposes, a gymnasium for men and a gymnasium for women, also a large building, the Coliseum, in which athletic events are held. The State Legislature has authorized the construction of two swimming pools which will be built as soon as materials become available.

Required Physical Education and Health

All undergraduate students classified academically as freshmen and sophomores who are registered for more than six semester hours are required to complete four prescribed courses in physical education. In addition, all freshmen women, except those majoring in physical education, must register for the two prescribed courses in hygiene. These courses must be taken by all eligible students during the first two years of attendance at the University, whether they intend to graduate or not. Transfer students who do not have credit in these courses must complete them or take them until graduation, whichever occurs first.

A student having a physical handicap which prevents participation in the regular activities program will be given a prescription of adaptive work suitable to his physical capacity.

Exemptions from required physical activities are given only for severe physical disabilities. A statement from the University physician certifying complete physical disqualification is necessary.

Students majoring in Physical Education, Health, or Recreation meet these requirements by special professional courses.

Elective Activities

Sophomore students who have met minimal requirements in the freshman course may elect from a variety of activities such as the following:

Men—Badminton, basketball, boxing, fencing, gymnastics, horseshoes, judo, soccer, softball, tennis, touch football, track, tumbling, volleyball, weight lifting, wrestling, and others.

Women—Archery, badminton, basketball, body mechanics, bowling, dance, golf, softball, tennis, volleyball, and others.

Uniforms for Required Courses

Men—White cotton T-shirt, black shorts, supporters, and all-white tennis shoes.

Women—One-piece blue uniform, white ankle socks, sandals, and all-white tennis shoes.

Intramurals

The facilities of the department are available to all students when the time does not interfere with scheduled activities.

Men—An adequate program of intramural sports is conducted. Among activities in this program are touchball, badminton, wrestling, swimming, boxing, handball, and volleyball in the winter; softball, tennis, golf, and track in the spring. Plaques, medals and other appropriate awards in all tournaments of the program are provided for the winning teams and individual members.

Women—Recreational games; team sports, including hockey, soccer, fieldball, Baltimore ball, speedball, basketball, volleyball, softball; individual sports, including tennis, badminton, fencing, golf, archery, and table tennis are offered.

The Women's Recreation Association under the supervision of the Department sponsors and conducts the intramural tournaments in these activities and arranges sports days with neighboring colleges.

PROFESSIONAL CURRICULA

Physical Education

The professional work in Physical Education is intended to develop leaders to teach and to supervise such work in public school systems, in private schools, and colleges.

Health Education

The student majoring in this field is preparing to teach individual and community hygiene in school situations. This includes instruction in safety and first aid. There is increasing demand for properly trained people in these fields.

Recreation

The rapidly growing field of Recreation utilizes the resources of school, community, industry, camps, and other agencies to enrich the greatly in-

creased leisure of modern life. Through a broad and varied program students are prepared for leadership in this field.

Pre-physical Therapy

Each student in this special curriculum will, with his adviser, prepare an individual program to meet the requirements for the institution in which he plans to enroll for Physical Therapy training.

Graduate Curricula

Candidates for advanced degrees in Education with areas of emphasis in Physical Education, Health, or Recreation are accepted in accordance with the procedure and requirements of the Graduate School. (See Graduate School catalog.)

Undergraduate Curricula

Professional curricula are offered leading to the degree of Bachelor of Science with a major in Physical Education, in Health, in Recreation, or in Pre-Physical Therapy. A total of 120 semester hours in addition to the University requirement in military and physical education is required for graduation. In no case shall the total number of semester hours be less than 128 for women and 136 for men.

The freshman and sophomore curricula are essentially the same for all majors, consisting of basic cultural courses and introductory professional courses, except as follows:

- (1) Majors in Health Education and Pre-physical Therapy may select such physical activities as well meet minimal departmental requirements, allowing additional electives.
- (2) Majors in Recreation are not required to register for P.E. 56 and P.E. 58.

The junior and senior curricula provide four areas of major specialization and the opportunity to develop one or more minors as desired.

All applicants must be free of handicapping physical defects and be approved by the Medical Director and the Director of the major department.

Suitable uniforms are required in the major activity classes.

Men—White cotton T-shirt, full-length black pants with gold braid on side, supporters, and all-white tennis shoes.

Women—All-white shorts, shirt, ankle socks, sandals, and all-white tennis shoes. In addition, a white one-piece suit is required for practice teaching. All of these must be of the style prescribed.

Curricula in Physical Education, Health, and Recreation

Freshman Year	Sem. Cr.		Sem. Cr.
Eng. 1—Composition and American Literature	3	Eng. 2—Composition and American Literature	3
Zool. 1—General Zoology.....	4	G. & P. 1—American Government...	3
Soc. 1—Sociology of American Life..	3	Sp. 10—Group Discussion.....	2
Sp. 4—Voice and Diction.....	3	Ed. 2—Introduction to Education....	2
*P. E. 10—Basic Body Controls.....	1	P. E. 30—Introduction to Physical Education, Health, and Recreation	3
*P. E. 61, 62—Elementary Techniques of Sports and Gymnastics.....	2	P. E. 20—Basic Body Controls.....	1
P. E. 52—Dance Techniques.....	1	P. E. 54—Dance Techniques.....	1
M. S. 1—Basic R. O. T. C.....	3	P. E. 63, 64—Elementary Techniques of Sports and Gymnastics.....	2
	—	M. S. 2—Basic R. O. T. C.....	3
Total.....	M 19 W 17	Total.....	M 19 W 17

Sophomore Year	—Semester—	
	I	II
Eng. 3, 4—Composition and Reading World Literature.....	3	3
Hist. 5, 6—History of American Civilization.....	3	3
Zool. 14, 15—Human Anatomy and Physiology.....	4	4
Hea. 40—Personal and Community Hygiene.....	3	....
Hea. 50—First Aid and Safety.....	....	2
P. E. 65, 67—Intermediate Techniques of Sports and Gymnastics.....	2	2
P. E. 66, 68—Sports, Folk Dances and Recreational Activities.....	2	2
P. E. 56, 58—Dance Techniques	1	1
M. S. 3, 4—Basic R. O. T. C.....	3	3
Electives (M) .....	....	2
Total.....	M 18 W 16	M 19 W 15

Physical Education Curriculum

Junior Year

Zool. 53—Physiology of Exercise.....	....	2
Ed. 147—Audio-Visual Education.....	2	....
P. E. 100—Kinesiology	3	....
P. E. 101, 103—Organization and Officiating in Intramurals.....	2	2
Ed. 140—Curriculum, Instruction, and Observation.....	....	3
P. E. 180—Measurement in Physical Education and Health.....	....	3
P. E. 170—Principles of Physical Education.....	3	....
P. E. 113, 115—Methods and Materials for Secondary Schools.....	2	2
P. E. 114, 116—Methods and Materials for Secondary Schools.....	2	2
P. E. 124, 126—Methods and Materials in Team Sports.....	2	2
Electives	4-5	4-5
Total.....	M 17 W 16	M 17 W 16

* Odd numbered P. E. courses are for men; even numbered P. E. courses for women; P. E. courses ending in zero are for both. M—men; W—women.

<i>Senior Year</i>	Semester	
	I	II
Ed. 149—Methods and Practice Teaching (see note below).....	9	....
Psych. 110—Educational Psychology	3	....
P. E. 190—Administration and Supervision of Physical Education, Health, and Recreation	3	....
P. E. 140—Therapeutics .....	....	3
Electives .....	....	13
Total	15	16

NOTE: When Ed. 149 is taken, Psych. 110 and P. E. 190 must also be scheduled; all other required senior courses must be taken in the other semester.

Health Curriculum

Junior Year

Bact. 1—General Bacteriology.....	4	....
P. E. 100—Kinesiology	3	....
P. E. 180—Measurement in Physical Education and Health.....	3	....
Hea. 110—Health Service and Supervision.....	3	....
Ed. 147—Audio-Visual Education.....	2	....
Bact. 5—Advanced General Bacteriology.....	....	4
Ed. 140—Curriculum, Instruction and Observation.....	....	3
H. Ec. Ed. 110—Child Development.....	....	3
Psych. 5—Mental Hygiene .....	....	3
Hea. 120—Teaching Health .....	....	2
Electives	1-2	1-2
Total.....	M 17 W 16	M 17 W 16

Senior Year

Ed. 149—Methods and Practice Teaching (see note below).....	9	....
Psych. 110—Educational Psychology	3	....
P. E. 190—Administration and Supervision of Physical Education, Health, and Recreation	3	....
P. E. 140—Therapeutics .....	....	3
Electives .....	....	13
Total	15	16

NOTE: When Ed. 149 is taken, Psych. 110 and P. E. 190 must also be scheduled; all other required senior courses must be taken in the other semester.

Recreation Curriculum

Junior Year

Soc. 2—Principles of Sociology.....	3	....
Rec. 30—History and Introduction to Recreation.....	2	....
Music 1—Music Appreciation	3	....
Soc. 118—Community Organization.....	....	3
Sp. 113—Play Production .....	....	3
Crafts 2—Simple Crafts .....	....	2
Rec. 120—Camp Administration and Leadership.....	....	3
Rec. 130—Principles and Practice of Recreation.....	....	3
Electives	8-9	2-3
Total.....	M 17 W 16	M 17 W 16

<i>Senior Year</i>	(Semester)	
	I	II
Rec. 100—Co-recreational Games and Programs.....	.....	2
Rec. 110—Nature Lore.....	.....	1-3
Rec. 140—Observation and Service in Recreation (see note below)....	5	.....
Rec. 160—Recreational Golf .....	.....	1
Rec. 170—Organization and Administration of Recreation.....	.....	3
P. E. 101—Organization and Officiating in Intramurals.....	2
P. E. 124, 126—Methods and Materials in Team Sports.....	2	2
Electives	8	5-7
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Total	15	16

NOTE: Students desiring certification as teachers must plan their courses to meet College of Education requirements in practice teaching.

Minor Electives

Any student may develop a minor in Physical Education, Health, or Recreation by completing twenty (20) semester hours of work in that field and four (4) hours from other fields in this Department.

Pre-physical Therapy Curriculum

Each student majoring in this field will be required to take the basic courses required in this Department for the freshman and sophomore years, except that Physics 1, 2 will replace the physical activity courses in excess of minimal requirements. A curriculum for the junior and senior years must include the following courses with electives agreed upon by his adviser. A curriculum for the junior and senior years must include the following courses with electives agreed upon by his adviser.

Junior Year

P. E. 100—Kinesiology	3	.....
Chem. 1, 3—General Chemistry.....	4	4
Soc. 131—Introduction to Social Service.....	3	.....
Cr. 2, 3—Simple Crafts.....	2	2
Psych. 5—Mental Hygiene.....	.....	3
Electives	5	8
	-----	-----
Total	17	17

Senior Year

Psych. 125—Child Psychology	3	.....
Soc. 153—Juvenile Delinquency	3	.....
Psych. 126—Developmental Psychology.....	3
P. E. 140—Therapeutics	3
Electives	11	11
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Total	17	17

DESCRIPTION OF COURSES

The University reserves the right to withdraw or discontinue any course for which an insufficient number of students have registered to warrant giving the course. In such an event, no fee will be charged for transfer to another course.

Courses are designated by numbers as follows:

1 to 99: courses for undergraduates.

100 to 199: courses for advanced undergraduates and graduates. (Not all courses numbered 100 to 199 may be taken for graduate credit.)

200 to 299: courses for graduates only.

A course with a single number extends through one semester. A course with a double number extends through two semesters.

Courses not otherwise designated are lecture courses. The number of hours' credit is shown by the arabic numeral in parentheses after the title of the course.

A separate schedule of courses is issued each semester, giving the hours, places of meeting, and other information required by the student in making out his program. Subjects of courses in Military Science and Tactics are subject to changes necessitated by changes in R. O. T. C. programs prescribed by the armed forces. Students obtain these schedules when they register.

MILITARY SCIENCE AND TACTICS

M. S. 1, 2. Basic R. O. T. C. (3)—Each semester.

Two one-hour periods of Leadership, Drill and Exercise of Command. Three one-hour classroom periods. Subjects: National Defense Act, Individual Weapons, Rifle Marksmanship, Hygiene and First Aid, Maps and Aerial Photographs, Military Organization.

M. S. 3, 4. Basic R. O. T. C. (3)—Each semester.

Two one-hour periods of Leadership, Drill and Exercise of Command, and three one-hour classroom periods. Subjects: Browning Automatic Rifle, Evolution of Warfare, Military Administration, Physical Development Methods, Machine Guns, Maps, Aerial Photographs and Sketching, Military Law and Boards.

M. S. 101I, 102I. First Year Advanced (Infantry) (3)—Each semester.

Two one-hour periods of Leadership, Drill and Exercise of Command, and three one-hour classroom periods. Subjects: Tactics and Technique of Infantry to include, Communications, Gunnery, Technique of Fire and Fire Control, Motors, and Transportation, Geographical Foundation of National Power, Military Leadership, Psychology and Personnel Management, Military Law and Boards, Organization, the Military Team and Troop Movement.

M. S. 101A, 102A. First Year Advanced (Air Force) (3)—Each semester.

Two one-hour periods of Leadership, Drill and Exercise of Command, and three one-hour classroom periods. Subjects: Tactics and Technique of Air Force to include, History of U. S. Air Force, Navigation, Aeronautics, Guided Missiles, Military Problems of the United States, Military Leadership, Psychology and Personnel Management, Geographical Foundation of National Power, Military Law and Boards.

M. S. 101S, 102S. First Year Advanced (Signal) (3)—Each semester.

Two one-hour periods of Leadership, Drill and Exercise of Command, and three one-hour classroom periods. Subjects: Tactics and Technique of Signal Corps to include, Organization of the Signal Corps, Signal Communications for all Arms and Services, Field Wire Communications, Field Radio Communications, Message Center and Signal Center Procedure, Communication Security, Signal Corps Photography, Military Law and Boards, Geographical Foundation of National Power.

M. S. 101T, 102T. First Year Advanced (Transportation Corps) (3)—Each Semester.

Two one-hour periods of Leadership, Drill and Exercise of Command, and three one-hour classroom periods. Subjects: Geographical Foundations of National Power, Military Law and Boards, Military Leadership and Psychology and Personnel Management. Tactics and Techniques of the Transportation Corps to include: Organizations and Functions of the Transportation Corps, Transportation Services, Transportation Control Agencies, Zone of the Interior, Military Freight Movements and Military Passenger Movements in the Zone of the Interior, Military Motor Transport, Ports, Zone of the Interior, Amphibian Trucks (DUKWS) and Harbor Craft, Stevedore Operations, the Place of the Transportation Corps in the Military Team, and Transportation Services, Theater of Operations.

M. S. 103I, 104I. Second Year Advanced (Infantry) (3)—Each semester.

Two one-hour periods of Leadership, Drill and Exercise of Command, and three one-hour classroom periods. Subjects: Command and Staff, Military Teaching Methods, Psychological Warfare, Military Problems of the United States Military Mobilization and Demobilization, Combat Intelligence, Tactics and Technique of Infantry to include: Supply and Maintenance, Technique of Fire, Fire Control, New Developments, Troop Movements, and Communications.

M. S. 103A, 104A. Second Year Advanced (Air Force) (3)—Each semester.

Two one-hour periods of Leadership, Drill and Exercise of Command, and three one-hour classroom periods. Subjects: Command and Staff, Military Teaching Methods, Psychological Warfare, Geographical Foundation of National Power, Military Mobilization and Demobilization, Combat Intelligence, Tactics and Technique of Air Force (this will be a major

subject in Aircraft Maintenance Engineering or Air Force Supply, whichever field is more closely related to the student's college).

M. S. 103S, 104S. Second Year Advanced (Signal) (3)—Each semester.

Two one-hour periods of Leadership, Drill and Exercise of Command, and three one-hour classroom periods. Subjects: Command and Staff, Military Teaching Methods, Psychological Warfare, U. S. Military Problems, Combined and Joint Operations, Military Mobilization and Demobilization, Combat Intelligence, Tactics and Technique of Signal Corps, Wire Communication, Signal Supply and Repair, Higher Echelon Communications including: Fixed Station Radio, Radar, VHF, Direction Finding Equipment and Television.

M. S. 103T, 104T. Second Year Advanced (Transportation Corps) (3)—Each semester.

Two one-hour periods of Leadership, Drill and Exercise of Command, and three one-hour classroom periods. Subjects: Command and Staff, Military Teaching Methods, Psychological Warfare, Military Problems of the United States, Military Mobilization and Demobilization, Combat Intelligence, and Tactics and Techniques of the Transportation Corps to include: Ports, Zone of the Interior, Ports, Theater of Operations, Highway Transport Service, Theater of Operations, Military Railway Service, Theater of Operations, Inland Waterways, Theater of Operations, Transportation Logistics, Transportation Corps Supply, and Movement Control, Theater of Operations.

M. S. 151. Military Logistics (3)—Second semester.

Three one-hour classroom periods. A study of organization, troop movements by Motor, Rail, Air, Water. Evacuation replacements and prisoner of war, characteristics of materiel, supply. Staff, procedure to include organization, duties and actions.

M. S. 152. Military Leadership (3)—Second semester.

Three one-hour classroom periods. The study of the great leaders of history and an analysis of qualities which attributed to their success.

M. S. 153. Military Policy of the United States (3)—First semester.

Three one-hour classroom periods. A study of our military history and our military policy and the effects of the latter on the former.

PHYSICAL EDUCATION, HEALTH, AND RECREATION

P.E. courses open only to Men are given odd numbers.

P.E. courses open only to Women have even numbers.

P.E. courses ending in zero are open to both men and women.

A. Physical Education

*P. E. 1, 3. Conditioning and Fitness Exercises (1, 1)—Three hours a week.

Basic exercises to promote skill, speed, stamina and strength by calisthenics, running, jumping, tumbling, grass drills and mass combative fundamentals. Men not physically qualified must substitute Adaptive Activities.

***P. E. 2, 4. Basic Skills of Sports and Rhythms (1, 1)**—Three hours a week.

Required of all freshmen. Instruction and practice in fundamentals of sports, rhythms, and body mechanics.

***P. E. 5, 7. Conditioning and Fitness Exercises (1, 1)**—Three hours a week.

Prerequisite at least two semesters of required exercises.

Required of men not yet having a Physical Fitness Rating (PFR) of 300.

***P. E. 6, 8. Selected Sports and Dance (1, 1)**—Three hours a week.

Sophomores may elect from the following: Archery, badminton, basketball, bowling, fencing, folk and square dance, modern dance, social dance, golf, hockey, rifle, softball, speedball, tennis, and volleyball.

***P. E. 9, 11; 13, 15. Adaptive Activities (1, 1; 1, 1)**—Three hours a week.

Required modified activities and exercises are prescribed individually for men not physically qualified to take the Conditioning and Fitness Exercises.

P. E. 10, 20. Basic Body Controls (1, 1)—Three hours a week.

This is designed to acquaint the student with the fundamental principles and techniques of body movement and to provide for practical application in sports, rhythmic and gymnastic activities.

***P. E. 12, 14; 16, 18. Adaptive Activities (1, 1; 1, 1)**—Three hours a week.

To be taken successively by those women not physically qualified to take P.E. 2, 4, 6, 8. Modified activities and exercises are prescribed individually.

***P. E. 17. Touch Football, Wrestling (1)**—First and second semesters. Three hours a week. Prerequisite, two semesters of required exercises and a PFR of 300.

Instruction and practice in the skills of touch football and wrestling.

***P. E. 19. Soccer, Boxing (1)**—First and second semesters. Three hours a week.

Prerequisite two semesters of required exercises and a PFR of 300.

Instruction and practice in the conditioning exercises and skills used in soccer and boxing.

* Physical activities required by freshmen and sophomores in all colleges except those majoring in physical education, health, and recreation. Sophomore courses are selective as indicated.

***P. E. 21. Gymnastics (1)**—First and second semesters. Three hours a week. Prerequisite, two semesters of required exercises and a PFR of 300.

Instruction and practice in the skills using apparatus such as mats, rings, parallel and horizontal bars, ropes, horse, springboard, and trampoline.

***P. E. 23. Basketball, Track and Field (1)**—First and second semesters. Three hours a week. Prerequisite, two semesters of required exercises and a PFR of 300.

Instruction and practice in the skills of basketball and the events included in track and field athletics.

***P. E. 25. Net Games (1)**—First and second semesters. Three hours a week. Prerequisite, two semesters of required exercises and a PFR of 300.

Instruction and practice in the skills of volleyball, tennis, and badminton. Each student must furnish own rackets.

***P. E. 27. Tumbling, Softball (1)**—First and second semesters. Three hours a week. Prerequisite, two semesters of required exercises and a PFR of 300.

Instruction and practice in the skills of tumbling and softball.

***P. E. 29. Special Individual Skills (1)**—First and second semesters. Three hours a week. Prerequisite, two semesters of required exercises and a PFR of 300.

Instruction and practice in the skills of unicycle, slack wire, hand balancing, juggling, accuracy stunts, etc.

P. E. 30. Introduction to Physical Education, Health and Recreation (3)—First and second semesters.

Orientation course in the professional fields.

***P. E. 31. Weight Lifting (1)**—First and second semesters. Three hours a week. Prerequisite, two semesters of required exercises and a PFR of 300.

Instruction and practice in exercises designed to develop the skill, speed, strength and stamina needed to lift barbell weights.

P. E. 52, 54. Dance Techniques (1, 1)—Three hours a week.

A basic course which includes movement techniques of modern dance and analysis of form and composition.

P. E. 56, 58. Dance Techniques (1, 1)—Three hours a week.

A continuation of P.E. 52, 54. More advanced movements of the modern techniques are studied. Students are given the opportunity to create and participate in simple group dances. Theory in teaching methods.

* Physical activities required by freshmen and sophomores in all colleges except those majoring in physical education, health, and recreation. Sophomore courses are selective as indicated.

P. E. 60. Advanced Gymnastics (2)—Second semester. Four laboratory hours a week.

Practice and theory in gymnastics, pyramids, trampoline, springboard, and exhibition activities appropriate for secondary school pupils.

P. E. 61, 63. Elementary Techniques of Sports and Gymnastics (2, 2)—Six hours a week.

Progressive techniques and practice of seasonal sports and games, stunts and introductory skills of gymnastic exercises.

P. E. 62, 64. Elementary Techniques of Sports and Gymnastics (2, 2)—Six hours a week.

Progressive techniques and practice of seasonal sports, stunts, tumbling, self-testing activities and gymnastic exercises.

P. E. 65, 67. Intermediate Techniques of Sports and Gymnastics (2, 2)—Techniques and practice of sports and gymnastics.

P. E. 66, 68. Sports, Folk Dance and Recreational Activities (2, 2)—Six hours a week.

Techniques of selected sports, experience in folk and square dance, and recreational activities.

P. E. 70. Advanced Modern Dance (2)—Second semester. Four laboratory periods a week. Prerequisites, P. E. 52, 54, 56, 58, or permission of instructor.

Advanced techniques and practice in teaching dance.

For Advanced Undergraduates and Graduates

P. E. 100. Kinesiology (3)—First and second semesters.

A study and analysis of human motion conforming to the laws of mechanics and principles of physiology and anatomy.

P. E. 101, 103. Organization and Officiating in Intramurals (2, 2)—Six hours a week.

Organization, administration, and promotion of intramurals at various school levels. Types of tournaments, units of competition, handling of student leader personnel, etc.

P. E. 112. History of Dance (3)—First semester. Prerequisites, P. E. 52, 54, 56, 58, or permission of instructor.

Designed to give an overview of the development of dance from primitive to modern times. Students have experience in planning dances for specific historic periods.

* Physical activities required by freshmen and sophomores in all colleges except those majoring in physical education, health, and recreation. Sophomore courses are selective as indicated.

P. E. 113, 115. Methods and Materials for Secondary Schools I (2, 2)—Two lectures and two laboratories a week.

Theory and practice: class organization, analysis and teaching techniques of sports, gymnastics, self-testing activities, and rhythms for Junior and Senior High School programs.

P. E. 114, 116. Methods and Materials for Secondary Schools II (2, 2)—Two lecture and two laboratory periods a week.

Theory and practice: class organization, analysis, and teaching techniques of sports, gymnastics, self-testing activities, and rhythms for Junior and Senior High School programs.

P. E. 123, 125. Coaching Athletics (3, 3)—Two lecture and two laboratory hours a week.

Methods of coaching the various competitive sports commonly found in high school and college programs.

P. E. 124, 126. Methods and Materials in Team Sports (2, 2)—Four laboratory hours a week. Prerequisites, P. E. 62, 64, 66, 68.

Theory in coaching and officiating sports for women. Opportunity for National Officials' Ratings.

P. E. 140. Therapeutics (3)—First and second semesters. Prerequisite, P. E. 100.

A study of common structural abnormalities, corrective (adaptive) exercises, and massage. Causes, prevention and correction of postural defects. Testing methods. Theory and practice.

P. E. 150. History and Philosophy of Physical Education (2)—Second semester.

A study of the origins and derivations of modern physical education and the implications of the modern program for human welfare.

P. E. 170. Principles of Physical Education (3)—First and second semesters.

An integrative resume of the basic and specialized sciences pertinent to this field and their application in developing the modern physical education curriculum.

P. E. 180. Measurement in Physical Education and Health (3)—First and second semesters. Two lecture and two laboratory periods a week.

The application of measurement to physical and health education.

P. E. 181. Training and Conditioning (3)—Second semester. Two lecture and two laboratory hours a week.

The training and physical conditioning of athletes. Treatment of athletic injuries by taping, massage, hydro-therapy, physical therapy, and electro-therapy. Remedial and conditioning exercises. Theory and practice.

P. E. 190. Administration and Supervision of Physical Education, Health, and Recreation (3)—First and second semesters.

The application of the principles of administration and supervision to physical education, health, and recreation.

For Graduates

P. E. 200. Departmental Seminar (1-2)—First and second semesters and summer.

Each candidate for the Master's Degree will present to the group, including departmental and invited authorities, a mimeographed outline of his thesis topic; a verbally delivered digest of the main thesis problem, sub-problems and the tentative solutions. This must be presented, and defended as to criticism in a manner satisfactory to the fellow students, faculty and/or authorities present. (Gloss and Deach.)

P. E. 201. Foundations in Physical Education, Health, and Recreation (3)—First and second semesters.

An overall view of the total fields with their inter-relations and places in education. (Deach and Field.)

P. E. 203. Supervisory Techniques in Physical Education, Health, and Recreation (3)—First and second semesters and alternate summers.

Principles and practice of supervision applied to the special fields indicated. Includes evaluation of facilities, program, personnel, and processes, using either survey or guidance techniques. (Hutto.)

P. E. 205. Administration of Athletics (2)—First and second semesters and summer.

Problems and procedures in the administration of school and college athletic competition, the installation and maintenance of indoor and outdoor athletic equipment, special problems of surveys, legislation, property acquisition, finances, inventories, and the selection of personnel. (Burnett.)

P. E. 210. Comparative Problems in Physical Education (2)—First and second semesters.

A comparative international survey of the present-day and possible future programs of physical education, health and recreation. (Gloss.)

P. E. 230. Contemporary Physical Education (3)—First and second semesters and alternate summers.

The present-day status and possible future developments of community, state, federal (including military), physical fitness, and physical education programs. (Gloss.)

P. E. 250. Survey in the Area of Physical Education, Health, and Recreation (6)—First and second semesters and summer.

A library survey course, covering the total areas of physical education, health, and recreation, plus intensive research on one specific limited problem of which a digest, including a bibliography, is to be submitted. (Gloss.)

P. E. 260. Research (1-6)—First and second semesters and summer.

For advanced students capable of doing individual research on some topic other than the Thesis (Ed. 289) or the digest chosen in P. E. 250. Approval of the instructor is required. (Gloss and Burnett.)

B. Health Education

Hea. 2. Hygiene (2)—First and second semesters.

Required of all Freshmen women except those majoring in the physical education department. A course designed to acquaint women with health principles as applied to the individual.

Hea. 4. Hygiene (2)—First and second semesters.

Required of all Freshmen women except those majoring in the physical education department. A course concerned with health of people as a group and with organizations, both private and governmental, which attempt to improve health conditions.

Hea. 40. Personal and Community Hygiene (3)—First and second semesters.

A study of personal and community hygiene for major students. Emphasis on causative factors of various diseases, means of transmission, and prevention.

Hea. 50. First Aid and Safety (2)—First and second semesters.

Standard American Red Cross course in first aid; safety in the home, school and community.

Hea. 60. Advanced First Aid (2)—First and second semesters.

Opportunity to secure Red Cross advanced and instructor's certificate.

Hea. 70. Safety Education (3)—First and second semesters.

A study of the causes of accidents and methods of prevention, including principles of traffic and industrial safety.

For Advanced Undergraduates and Graduates

Hea. 110. Health Service and Supervision (3)—First and second semesters.

The supervision of health inspection and physical examinations of students, including the sanitary inspection of the school plant.

Hea. 112. Home Nursing (2)—First semester.

A study of the use of household remedies and the care of house patients, bed making, preparation of invalid's food, use of thermometer, and care before the physician arrives.

Hea. 114. Health Education for Elementary Schools (2)—First and second semesters.

Materials and methods in health education for the classroom teacher.

Hea. 120. Teaching Health (2)—First and second semesters. Prerequisite, Hea. 40 or equivalent.

A study of materials and methods in health education. Planning the health education curriculum.

Hea. 130. Organization and Administration of Health Education (3)—First and second semesters.

The planning of graded school curriculum and the presentation of courses of study in hygiene to the classroom teacher.

Hea. 160. Problems in School Health Education (4-6)—Arranged.

A workshop type course for experienced teachers, administrators, nurses and other active health personnel dealing with the practical problems of educating children in healthful living.

For Graduates

Hea. 220. Principles and Practice of Health Education (3)—First and second semesters and alternate summers.

Health education and health in public schools and colleges as supported by endowed funds or by public taxation. (Burnett.)

Hea. 240. Advancements in Modern Health (3)—First and second semesters and summer.

Latest knowledge of the fundamental principles involved in personal, community, state and national health; functions and relationships of the various health agencies cooperating with the educational faculties and their contributions to health; present status of preventive medicine and sanitation. (Burnett.)

C. Recreation

Rec. 30. History and Introduction to Recreation (2)—First and second semesters.

The beginnings and expansion of community recreation as fostered by individuals and organizations. Emphasis is placed on history, aims, leadership, areas, facilities, and programs.

For Advanced Undergraduates and Graduates

Rec. 100. Co-recreational Games and Programs (2)—First and second semesters. Four laboratory hours a week.

Activities for social recreation in playgrounds, industries, camps, churches, and gymnasiums.

Rec. 102. Recreational Games for the Elementary Schools (2)—First semester.

Materials and methods, theory and practice in teaching games.

Rec. 110. Nature Lore (1-3)—Second semester.

An evening course and six Saturdays and Sundays during April and May; given in Washington. The conduct of nature trips for study and appreciation of plant, insect and animal life, and astronomy.

Rec. 120. Camp Administration and Leadership (3)—First and second semesters.

The observation and practice in the conduct of summer camps for children and adults. The management of boating and overnight trips, including the study of woodcraft and outdoor cookery.

Rec. 130. Principles and Practice of Recreation (3)—First and second semesters.

Theories of recreation and methods of conducting individual and group recreation put into practice with college students.

Rec. 140. Observation and Service in Recreation (5)—First and second semesters.

Observation of recreation centers, city playgrounds, community and night centers. Leadership practice in these areas and written reports. Students who desire to be certified as teachers must plan their courses to meet College of Education requirements in practice teaching.

Rec. 160. Recreational Golf (1)—Second semester.

The game treated as a social pastime with practice in the etiquette and psychology of team play.

Rec. 170. Organization and Administration of Recreation (3)—First and second semesters.

A consideration of the management and the personnel required to conduct recreation activity programs by municipal, industrial, school, club, and social agencies.

For Graduates

Rec. 210. Philosophy of Recreation (2)—First and second semesters and alternate summers.

The possible implications for social betterment by proper use of leisure time in a democratic civilization which is constantly increasing the free time of the common man. (Gloss.)

Rec. 220. Contemporary Recreation (3)—First and second semesters and alternate summers.

The present-day status and the possible future developments of private, public, and industrial recreation. (Gloss.)

THE GRADUATE SCHOOL ANNOUNCEMENTS

THE GRADUATE COUNCIL

H. C. BYRD, LL.D., President of the University
 C. O. APPLEMAN, Ph.D., Dean of the Graduate School, Chairman
 HAROLD BENJAMIN, Ph.D., Professor of Education
 GUY A. CARDWELL, Ph.D., Professor of English
 E. N. CORY, Ph.D., Professor of Entomology
 H. F. COTTERMAN, Ph.D., Professor of Agricultural Education
 N. L. DRAKE, Ph.D., Professor of Organic Chemistry
 WILBERT J. HUFF, Ph.D., D.Sc., Professor of Chemical Engineering
 HAROLD C. HOFFSOMMER, Ph.D., Professor of Sociology
 W. B. KEMP, Ph.D., Director of Experiment Station
 M. MARIE MOUNT, M.A., Professor of Home and Institution Management
 J. FREEMAN PYLE, Ph.D., Professor of Economics and Marketing
 A. E. ZUCKER, Ph.D., Professor of Foreign Languages
 EDUARD UHLENHUTH, Ph.D., Professor of Gross Anatomy (Baltimore)

GRADUATE FACULTY

C. O. APPLEMAN, Ph.D., *Dean*

The faculty of the Graduate School includes all members of the various faculties who give instruction in approved graduate courses. The general administrative functions of the graduate faculty are delegated to the Graduate Council.

GENERAL INFORMATION

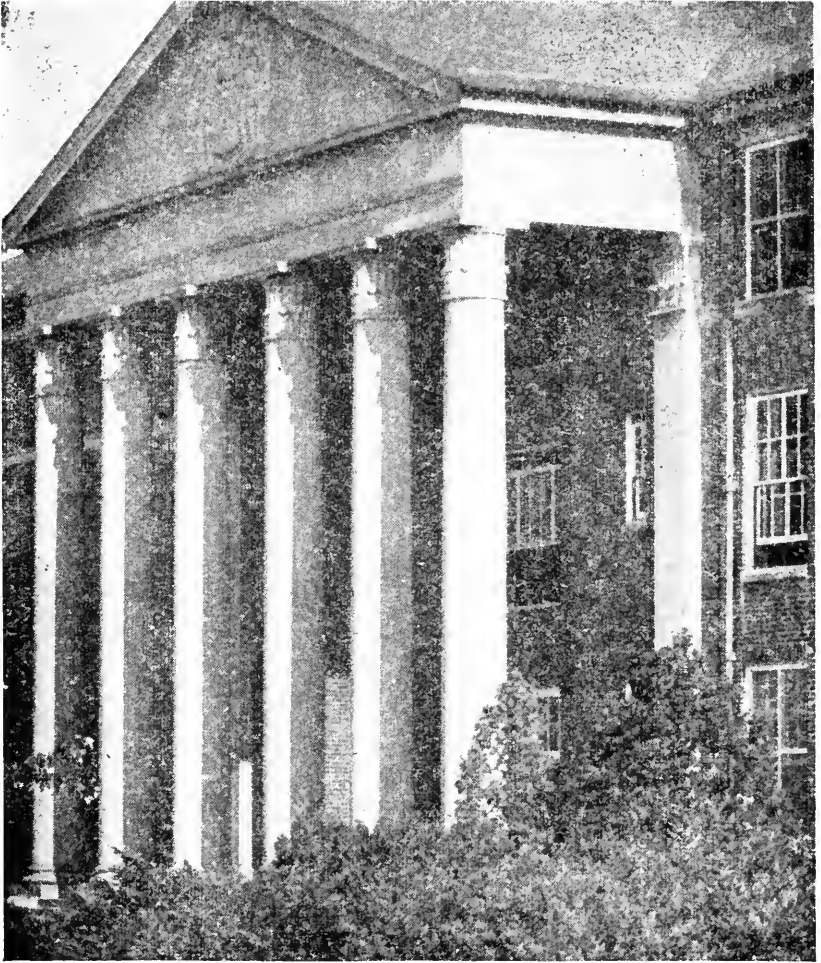
HISTORY AND ORGANIZATION

In the earlier years of the institution the Master's degree was frequently conferred, but the work of the graduate students was in charge of the departments concerned, under the supervision of the general faculty. The Graduate School of the University of Maryland was established in 1918, and organized graduate instruction leading to both the Master's and the Doctor's degree was undertaken. The faculty of the Graduate School includes all members of the various faculties who give instruction in approved graduate courses. The general administrative functions of the graduate faculty are delegated to a Graduate Council, of which the Dean of the Graduate School is chairman.

LOCATION

The University of Maryland is located at College Park, in Prince George's County, Maryland, on the Baltimore and Ohio Railroad, eight miles from Washington and thirty-two miles from Baltimore. Washington, with its wealth of resources, is easily accessible by train, street car and bus.

The professional schools of Medicine, Nursing, Pharmacy, Dentistry and Law are located in Baltimore, at the corner of Lombard and Greene Streets.



Headquarters of the Graduate School
College Park, Md.

LIBRARIES

In addition to the resources of the University libraries the great libraries of the national capital are easily available for reference work. Because of the proximity of these libraries to College Park they are a valuable asset to research and graduate work at the University of Maryland.

GENERAL REGULATIONS

ADMISSION

An applicant for admission to the Graduate School must hold a bachelor's or a master's degree from a college or university of recognized standing. The applicant shall furnish an official transcript of his collegiate record which for unconditional admission must show creditable completion of an adequate amount of undergraduate preparation for graduate work in his chosen field. Application for admission to the Graduate School should be made prior to dates of registration on blanks obtained from the office of the Dean.

After approval of the application a matriculation card, signed by the Dean, is issued to the student. This card permits one to register in the Graduate School. After payment of the fee, the matriculation card is stamped and returned to the student. It is his certificate of membership in the Graduate School and should be retained by the student to present at each succeeding registration.

Admission to the Graduate School does not necessarily imply admission to candidacy for an advanced degree.

REGISTRATION

All students pursuing graduate work in the University, even though they are not candidates for higher degrees, are required to register in the Graduate School at the beginning of each session. *In no case will graduate credit be given unless the student matriculates and registers in the Graduate School.* The program of work for each session is arranged by the student with the major department and entered upon two course cards, which are signed first by the professor in charge of the student's major subject and then by the Dean of the Graduate School. One card is retained by the Dean. The student takes the other card, and in case of a new student, also the matriculation card, to the Registrar's office, where the registration is completed. Students will not be admitted to graduate courses until the Registrar has certified to the instructor that registration has been completed. Course cards may be obtained at the Registrar's office or at the Dean's office. The heads of departments usually keep a supply of these cards in their respective offices.

GRADUATE COURSES

Graduate students must elect for credit in partial fulfillment of the requirements for higher degrees only courses designated *For Graduates* or

For Graduates and Advanced Graduates. Students who are inadequately prepared for graduate work in their chosen fields or who lack prerequisites for minor courses may elect a limited number of courses numbered from 1 to 99 in the general catalogue, but graduate credit will not be allowed for these courses. Courses that are audited are registered for in the same way as other courses, and the fees are the same.

PROGRAM OF WORK

The professor who is selected to direct a student's thesis work is the student's adviser in the formulation of a graduate program, including suitable minor work, which is arranged in cooperation with the instructors. To encourage thoroughness in scholarship through intensive application, graduate students in the regular sessions are limited to a program of fifteen credit hours per semester. If a student is preparing a theses during the minimum residence for the master's degree, the registration in graduate courses should not exceed twelve hours for the semester.

SUMMER SESSION

The University conducts a six weeks' summer session at College Park, with a comprehensive undergraduate and graduate program. The University publishes a separate bulletin giving full information on this summer session. This bulletin is available upon application to the Director of the Summer Session, University of Maryland, College Park.

GRADUATE WORK IN PROFESSIONAL SCHOOLS AT BALTIMORE

Graduate courses and opportunities for research are offered in the professional schools at Baltimore. Students pursuing graduate work in the professional schools must register in the Graduate School, and meet the same requirements and proceed in the same way, as do graduate students in other departments of the University. The graduate courses in the professional schools are listed on pages 84-91.

GRADUATE WORK BY SENIORS IN THIS UNIVERSITY

A senior of this University who has nearly completed the requirements for the undergraduate degree may, with the approval of his undergraduate dean and the Dean of the Graduate School, register in the undergraduate college for graduate courses, which may later be transferred for graduate credit toward an advanced degree at this University, but the total of undergraduate and graduate courses must not exceed fifteen credits for the semester. Excess credits in the senior year cannot later be used for graduate credit unless such pre-arrangement is made. Seniors who wish to register for graduate credit should apply to the Dean of the Graduate School for information about procedure.

ADMISSION TO CANDIDACY FOR ADVANCED DEGREES

Application for admission to candidacy for the Master's and for the Doctor's degree is made on application blanks which are obtained at the

office of the Dean of the Graduate School. These are filled out in duplicate by the student and submitted to his major department for further action and transmission to the Dean of the Graduate School. All applications for admission to candidacy must be approved by the Graduate Council.

Admission to candidacy in no case assures the student of a degree, but merely signifies he has met all the formal requirements and is considered by his instructors sufficiently prepared and able to pursue such graduate study and research as are demanded by the requirements of the degree sought. The candidate must show superior scholarship in graduate work already completed.

Application for admission to candidacy is made at the time stated in the sections dealing with the requirements for the degree sought.

REQUIREMENTS FOR THE DEGREES OF MASTER OF ARTS AND MASTER OF SCIENCE

Advancement to Candidacy. Each prospective candidate for the Master's degree is required to make application for admission to candidacy not later than the date when instruction begins for the semester in which the degree is sought. He must have completed at least twelve semester hours of graduate work at the University of Maryland. An average grade of "B" in all major and minor subjects is required.

Minimum Residence. A residence of at least two semesters, or equivalent, at this institution, is required.

Course Requirements. A minimum of twenty-four semester hours, exclusive of thesis and registration for research, with an average grade of "B" in courses approved for graduate credit, is required for the degrees of Master of Arts and Master of Science. At the option of the major department concerned the student may be required also to register for a maximum of six semester hours for research and thesis work. The total number of credit hours required for the degree would then be thirty. If the student is inadequately prepared for the required graduate courses, either in the major or minor subjects, additional courses may be required to supplement the undergraduate work. Of the twenty-four hours required in graduate courses, not less than twelve hours and not more than sixteen semester hours must be earned in the major subject. The remaining credits must be outside the major subject and must comprise a group of coherent courses intended to supplement and support the major work. Not less than one-half of the total required course credits for the degree, or a minimum of twelve, must be selected from courses numbered 200 or above. No credit for the degree of Master of Arts or Master of Science may be obtained for correspondence courses. The entire course of study must constitute a unified program approved by the student's major adviser and by the Dean of the Graduate School.

Transfer of Credit. Credit not to exceed six semester hours, obtained at other recognized institutions, may be transferred and applied to the

course requirements of the Master's degree, provided that the work was of graduate character, and provided that it is approved for inclusion in the student's graduate program at the University of Maryland. This transfer of credit is submitted to the Graduate Council for approval when the student applies for admission to candidacy for the degree. Acceptance of the transferred credits does not reduce the minimum residence requirement. The candidate is subject to final examination by this institution in all work offered for the degree.

Thesis. In addition to the twenty-four semester hours in graduate courses a satisfactory thesis is required of all candidates for the degrees of Master of Arts and Master of Science. (Exceptions may be made in the cases of candidates for the degree of Master of Arts in American Civilization. See page 11.) The thesis must demonstrate the student's ability to do independent work and it must be acceptable in literary style and composition. With the approval of the student's major professor and the Dean of the Graduate School, the thesis in certain cases may be prepared *in absentia* under direction and supervision of a member of the faculty of this institution.

The original copy of the thesis must be deposited in the office of the Graduate School not later than two weeks before the convocation at which the degree is sought. The thesis should not be bound by the student, as the University later binds all theses uniformly. An abstract of the contents of the thesis, 200 to 500 words in length, must accompany it. A manual giving full directions for the physical make-up of the thesis is in the hands of each professor who directs thesis work, and should be consulted by the student before the typing of the manuscript is begun. Individual copies of this manual may be obtained by the student at the Dean's office, at nominal cost.

Final Examination. The final oral examination is conducted by a committee appointed by the Dean of the Graduate School. The student's adviser acts as the chairman of the committee. The other members of the committee are persons under whom the student has taken most of his major and minor courses. The chairman and the candidate are notified of the personnel of the examining committee at least one week prior to the period set for oral examinations. The chairman of the committee selects the exact time and place for the examination and notifies the other members of the committee and the candidate. The examination should be conducted within the dates specified by the Dean of the Graduate School at the end of the semester, but upon recommendation of the student's adviser, an examining committee may be appointed by the Dean of the Graduate School at any time when all other requirements for the degree have been completed. A report of the committee is sent to the Dean as soon as possible after the examination. A special form for this purpose is supplied to the chairman of the committee. Such report is the basis upon which recommendation is made to the faculty that the candidate be granted the degree sought. The

period for the oral examination is usually about one hour, but the time should be long enough to insure an adequate examination.

The examining committee also approves the thesis, and it is the candidate's obligation to see that each member of the committee has ample opportunity to examine a copy of the thesis prior to the date of the examination.

A student will not be admitted to final examination until all other requirements for the degree have been met. In addition to the oral examination a comprehensive written examination may be required at the option of the major department.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN AMERICAN CIVILIZATION

Studies in American Civilization are intended to prepare the student for teaching, for further study, and for research in the general field of American Civilization, but with emphasis on one of two disciplines: history, including European backgrounds; or literature, including European literature, particularly English. All students will be expected to understand the development of American institutions and to demonstrate proficiency in the literary, social, economic, and political history of the United States.

With the approval of his adviser, a candidate for the Master of Arts degree with a major in American Civilization may elect in lieu of the thesis six additional hours of course work, to include at least two substantial seminar papers. The total number of credit hours required for the degree would then be thirty semester hours.

Each candidate must present credits for at least fifteen semester hours of work in American literature and American history, and credits for at least fifteen semester hours in supporting courses (nine hours if a thesis is elected). Supporting courses will normally be in such fields as European or Latin-American history, English literature, comparative literature, philosophy, art, education, sociology, economics, and politics and government.

Each candidate must demonstrate in a written examination that he possesses a reading knowledge of one foreign language.

All other requirements are the same as for the degrees of Master of Arts and Master of Science in other fields.

REQUIREMENTS FOR THE DEGREE OF MASTER OF EDUCATION

Thirty semester hours of course work are required, which may include courses in departments other than Education not to exceed one-half of the total thirty hours, such courses to be selected in conformity with the student's special needs as agreed upon by the student and his adviser. Of the thirty hours, not less than one-half must be on the 200 level.

At least four of the thirty semester hours must be in seminar work in connection with which two seminar papers will be prepared in specially

prescribed form, approved in writing by the instructor in charge of the seminar and the Dean of the College of Education, and filed in the College of Education. One of these papers shall deal with a topic in the student's major field of concentration.

Included in the program must be courses in educational statistics and in procedure of educational research.

The requirements in regard to advancement to candidacy, transfer of credits, and final oral examination are the same as for the degrees of Master of Arts and Master of Science.

REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

The degree of Master of Business Administration represents a minimum of two semesters of graduate work in addition to the satisfaction of all undergraduate requirements for the Bachelor's degree. Graduate work will normally include a minimum of twenty-four semester course hours and the completion of a satisfactory thesis. An average grade of "B" must be obtained in the twenty-four hours offered for graduate credit.

The undergraduate prerequisites for graduate work leading to the degree of Master of Business Administration may be satisfied by completion of work for the degree of Bachelor of Science in Business Administration at the University of Maryland, or by equivalent work leading to a corresponding degree at another accredited institution, providing this work is acceptable.

Candidates with Bachelor's degrees who have not taken the core group courses required for the degree of B.A. in Business Administration at this institution must do so in preparation for the degree of M.B.A. The list of core group courses includes principles of economics and accounting, the equivalent of six semester hours in business law, and introductory courses in labor economics, labor management, money and banking, financial management, marketing principles, marketing administration, and statistics (see Bulletin of College of Business and Public Administration for detailed list of core group courses).

Candidates for the M.B.A. degree may register in the Graduate School for any of these courses, but credit may not count as a part of the required twenty-four course hours in graduate work. Those who hold the Bachelor's degree in Business Administration may normally expect to complete the work for the M.B.A. in one year, while those who hold a B.A. or B.S. degree, other than in Business Administration, would normally require longer, but usually not to exceed two years.

GRADUATE YEAR ABROAD

Realizing the value for American students of study abroad, the University of Maryland has set up Foreign Study Centers to coordinate and direct work of graduate students in Paris, France, and Zurich, Switzerland.

Furthermore, the University has established the degree of Master of Foreign Study which will serve to give an American evaluation of work done abroad by the graduate students. The student attends courses at the University of Paris or at the University of Zurich and returns to the University of Maryland to submit his thesis and take an examination.

Since the system in European universities is quite different from that in American institutions, the registrants for Foreign Study participate in an orientation period in Paris or Zurich which serves to improve their knowledge of the language and to familiarize them with European customs and institutions.

Two kinds of awards are offered: the *Certificate*, for the successful completion of an approved program of thirty semester hours; and the Master of Foreign Study degree. The requirements for this degree are the same as those for a Master of Arts—twenty-four semester hours divided between a major and a minor and completion of a thesis.

The Foreign Study Office is directed locally by Dr. A. E. Zucker, chairman, Division of Humanities, while Dr. Edmund E. Miller is resident director abroad with his offices in Zurich. For the year 1948-49 Dr. William R. Quynn and Professor F. C. A. Koelln are acting as resident deans in Paris and Zurich, respectively, and Dr. Dorothy M. Quynn is serving as non-resident professor of history in Paris. All communications concerning this program should be directed to the Foreign Study Office, University of Maryland, College Park, Maryland.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF EDUCATION

The Doctor of Education degree is offered for students who expect to hold teaching or administrative positions in education and who desire to develop exceptional competence in special areas. The ability to explore and solve practical educational problems is emphasized. The requirements are the same as for the degree of Doctor of Philosophy except as specified below.

Foreign Languages. The requirement of foreign languages may be waived for candidates for this degree when the program of study and research does not involve the use of foreign languages.

Major and Minor Subjects. The candidate must select one major area in which he expects to develop exceptional competence. The amount of required course work in the major subject will vary with the individual candidate.

In addition to the major, the candidate must select approximately five other areas in which he intends to develop a high degree of competence. One or two of these areas may be designated as minor fields.

The candidate must register for a minimum of six hours of research.

Project. Instead of completing a thesis as required for a candidate for the degree of Doctor of Philosophy a candidate for this degree must dem-

onstrate exceptional competence to work through field problems by completing a project in the major area. A Committee on Doctoral Research is appointed for each candidate. The committee is composed of three members, at least two of whom are from the faculty of the College of Education. The committee passes upon the student's plans for research, determines the amount of course credit to be allowed for the doctoral study. The specialist in the student's major area serves as sponsor and provides detailed guidance for the project.

The regulations governing submission and form of copies of the project are the same as for the Ph. D. thesis.

Comprehensive Examination. A comprehensive examination must be passed before the candidate may take the final oral examination. The comprehensive examination may be oral or written, or both; it will cover the general field of major and minor study.

Final Oral Examination. The final examination covers the project and its relationship to the general field in which it lies and the candidate's attainments in related areas.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Advancement to Candidacy. Candidates for the Doctor's degree must be admitted to candidacy at least one academic year before the final examination. Applications for admission to candidacy for the Doctor's degree are made in duplicate by the student and submitted to his major department for further action and transmission to the Dean of the Graduate School. Blanks may be obtained at the office of the Graduate School.

The applicant must have demonstrated to the head of the Foreign Language Department that he possesses a reading knowledge of French and German. With the approval of the major department and the Graduate Council, in special cases another Foreign language may be substituted for either French or German. Preliminary examinations or such other substantial tests as the departments may elect are also required for admission to candidacy.

Residence. The equivalent of three years of full-time graduate study and research is the minimum required. Of the three years the equivalent of at least one year must be spent in residence at the University. On a part-time basis the time needed will be correspondingly increased. All work at other institutions offered in partial fulfillment of the requirements for the Ph.D. degree is submitted to the Graduate Council for approval, upon recommendation of the department concerned, when the student applies for admission to candidacy for the degree.

The Doctor's degree is not given merely as a certificate of residence and work, but is granted only upon sufficient evidence of high attainments in scholarship, and ability to carry on independent research in the special field in which the major work is done.

Major and Minor Subjects. The candidate must select a major and one or two closely related minor subjects. At least twenty-four semester hours, exclusive of research, are required in minor work. The remainder of the required residence is devoted to intensive study and research in the major field. The amount of required course work in the major subject will vary with the department and the individual candidate. The candidate must register for a minimum of twelve semester hours of research.

Thesis. The ability to do independent research must be shown by a dissertation on some topic connected with the major subject. An original type-written copy and two clear, plain carbon copies of the thesis, together with an abstract of the contents, 250 to 500 words in length, must be deposited in the office of the Dean at least three weeks before the convocation at which the degree is sought. It is the responsibility of the student also to provide copies of the thesis for the use of the members of the examining committee prior to the date of the final examination.

The original copy should not be bound by the student, as the University later binds uniformly all theses for the general University library. The carbon copies are bound by the student in cardboard covers which may be obtained at the Student's Supply Store. The abstracts are published biennially by the University in a special bulletin.

A manual giving full directions for the physical make-up of the thesis is in the hands of each professor who directs thesis work, and should be consulted by the student before typing of the thesis is begun. Students may obtain copies of this manual at the Dean's office, at nominal cost.

Final Examination. The final oral examination is held before a committee appointed by the Dean. One member of this committee is a representative of the graduate faculty who is not directly concerned with the student's graduate work. One or more members of the committee may be persons from other institutions who are distinguished scholars in the student's major field.

The duration of the examination is approximately three hours, and covers the research work of the candidate as embodied in his thesis, and his attainments in the fields of his major and minor subjects. The other detailed procedures are the same as those stated for the Master's examination.

RULES GOVERNING LANGUAGE EXAMINATIONS FOR CANDIDATES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

1. A candidate for the Doctor's degree must show in a written examination that he possesses a reading knowledge of French and German. With the approval of the major department and the Graduate Council, in special cases another foreign language may be substituted for either French or German. The passages to be translated will be taken from books and articles in his specialized field. Some 300 pages of text from which the applicant wishes to have his examination chosen should be submitted to the head of the Department of Foreign Languages at least three days

before the examination. The examination aims to test ability to use the foreign language for research purposes. It is presumed that the candidate will know sufficient grammar to distinguish inflectional forms and that he will be able to translate readily in two hours about 500 words of text, with the aid of a dictionary.

2. Application for admission to these tests must be filed in the office of the Department of Foreign Languages at least three days in advance of the tests.

3. No penalty is attached to failure in the examination, and an unsuccessful candidate is free to try again at the next date set for these tests.

4. Examinations are held near the office of the Department of Foreign Languages, on the first Wednesday of October, February and June, at 2 p.m.

GRADUATE FEES

The fees paid by graduate students are as follows:

A matriculation fee of \$10.00. This is paid once only, upon admission to the Graduate School.

A diploma fee (Master's degree), \$10.00.

A graduate fee, including hood (Doctor's degree), \$25.00.

College Park:

A fixed charge, each semester, of \$8.00 per semester credit hour for students carrying eight hours or less; for students carrying more than eight hours, \$65.00 for the semester.

Laboratory fees, where charged, range from \$1.00 to \$10.00 per course per semester.

Living Expenses and Self Help:

Board and lodging are available in many private homes in College Park and vicinity. The cost of board and room changes from about \$50.00 to \$55.00 a month, depending on the desires of the individual. A list of accommodations is maintained in the offices of the Dean of Women and the Dean of Men.

Application for student employment, aside from fellowships and assistantships, may be made through the offices of the Dean of Men and the Dean of Women, or to department heads.

FELLOWSHIPS AND ASSISTANTSHIPS

Fellowships. A number of fellowships have been established by the University. The stipend for the University fellows is \$600 for nine months and the remission of all graduate fees except the diploma fee. Several industrial and special fellowships, with varying stipends, are also available in certain departments.

Fellows are required to render minor services prescribed by their major departments. The usual amount of service required does not exceed twelve clock hours per week. Fellows are permitted to carry a full graduate program, and they may satisfy the residence requirement for higher degrees in the normal time.

Applications for fellowships are made on blanks which may be obtained from the office of the Graduate School. The application, with the necessary credentials, is sent by the applicant directly to the Dean of the Graduate School. Applications which are approved by the Dean are forwarded to the departments, where final selection of the fellows is made. The awards of University fellowships are on a competitive basis.

Graduate Assistantships. A number of teaching and research assistantships are available in several departments. The compensation is \$100 per month unless otherwise specified and varies with the nature and amount of service required and with the terms of appointment. The amount of credit allowed toward a degree likewise varies with the amount of time available for graduate study. The research assistants, especially those in the Experiment Station, usually participate in research that meets the requirements for a Master's or a Doctor's degree.

Applications for graduate assistantships are made directly to the departments concerned and appointments are made through the regular channels for staff appointments. Further information regarding these assistantships may be obtained from the department or college concerned.

COMMENCEMENT

Attendance is required at the commencement at which the degree is conferred.

Application for diploma must be filed in the office of the Registrar eight weeks before the convocation at which the candidate expects to obtain a degree.

Academic costume is required of all candidates at commencement. Those who so desire may purchase or rent caps and gowns at the Student's Supply Store. Order must be filed eight weeks before the date of convocation but may be cancelled later if the student finds himself unable to complete his work for the degree.

A time schedule, supplementing this catalog, is issued shortly before the beginning of each semester, showing the hours and location of class meetings. This schedule is available at the office of the Graduate School, or the office of the Registrar.

The provisions of this bulletin are not to be regarded as an irrevocable contract between the student and the University. The University reserves the right to change any provision or requirement at any time within the student's term of residence.

DESCRIPTION OF COURSES

For the convenience of students in making out schedules of studies, the subjects in the following Description of Courses are arranged alphabetically:

Agricultural Economics.....	469
Agricultural Education and Rural Life.....	471
Agronomy	472
Anatomy	537, 538
Animal Husbandry	472
Bacteriology	473, 539, 541
Biochemistry	538
Botany	474, 542
Business and Public Administration.....	476
Chemistry	484
Comparative Literature	487
Dairy Husbandry.....	488
Dentistry	537
Economics	479
Education	490
Engineering	498
English Language and Literature.....	506
Entomology	508
Foreign Languages and Literature.....	509
Geography	480
Government and Politics.....	482
History	512
Home Economics	515
Horticulture	519
Journalism	520
Mathematics	521
Medicine	538
Pharmaceutical Chemistry	542
Pharmacognosy	542
Pharmacology	540, 543
Pharmacy	541, 544
Philosophy	524
Physical Education, Health, Recreation.....	525
Physics	527, 544
Physiology	541
Poultry Husbandry	529
Psychology	529
Sociology	532
Speech	534
Veterinary Science	536
Zoology	536

METHOD OF NUMBERING COURSES AND COUNTING CREDIT HOURS

Courses for Advanced Undergraduates and Graduates are numbered 100 to 199; courses for Graduates only are numbered 200 and upward.

A course with a single number extends through one semester.

A course with a double number extends through two semesters.

The number of semester hour credits is shown by the arabic numerals in parentheses after the title of the course. Examples:

Course 101. Title (3). First semester.

If a laboratory course:

Course 101. Title (3). One lecture and two laboratory periods a week, first semester.

(This is a semester course: offered once a year.)

Course 101. Title (3). First and second semesters.

(This is a semester course, repeated each semester, and except for research, seminar, and certain problem courses, must be taken only one semester.)

Course 103, 104. Title (3, 3). Three hours a week, first and second semesters.

If a laboratory course:

Course 103, 104. Title (3, 3). One lecture and two laboratory periods a week, first and second semesters.

(This is a course extending through two semesters and carrying three semester credits each semester.)

Course 103, 104. Title (3, 3). Three hours a week, second and first semesters.

(This is a course extending through two semesters, but it begins with the second semester.)

Course 105, f, s. Title (3, 3). Three hours a week, first and second semesters.

(This is alternate way of listing a two-semester course.)

AGRICULTURAL ECONOMICS AND MARKETING

FOR GRADUATES AND ADVANCED UNDERGRADUATES

A. E. 100. Farm Economics (3). First semester. Prerequisites, Econ. 31, 32, or Econ. 37. Shull.

A. E. 101. Marketing of Farm Products (3). Second semester. Prerequisites, Econ. 31, 32, or Econ. 37. Shull.

- A. E. 103. Cooperation in Agriculture (3). First semester. Poffenberger.
- A. E. 104. Farm Finance (3). Second semester. Poffenberger.
- A. E. 105. Food Products Inspection (2). One lecture and one laboratory period a week, second semester. Staff.
- A. E. 106. Prices of Farm Products (3). Second semester. Poffenberger.
- A. E. 107. Analysis of the Farm Business (3). One lecture and two laboratory periods a week, first semester. Hamilton.
- A. E. 108. Farm Management (3). Second semester. Hamilton.
- A. E. 109. Research Problems (1-2). First and second semesters. DeVault.
- A. E. 110. Seminar (1, 1). First and second semesters. Hamilton.
- A. E. 111. Land Economics (3). First semester. _____.
- A. E. 114. Foreign Trade in Farm Products (3). Second semester. Shull.
- A. E. 115. Marketing of Dairy Products (3). First semester. Beal.
- A. E. 116. Marketing of Fruits and Vegetables (3). Second semester. Hoecker.

Poultry Marketing Problems. See Poultry Husbandry, P. H. 104.

Egg Marketing Problems. See Poultry Husbandry, P. H. 105.

Poultry Industrial and Economic Problems. See Poultry Husbandry, P. H. 107.

Market Milk. See Dairy Husbandry, D. H. 113.

Livestock Markets and Marketing. See Animal Husbandry, A. H. 150.

Meat and Livestock Products. See Animal Husbandry, A. H. 160.

Economics of Consumption. See Economics, Econ. 130.

Economics of Cooperatives. See Economics, Econ. 151.

Advertising Programs and Campaigns. See Business Administration, B. A. 151.

Retail Store Management. See Business Administration, B. A. 154.

FOR GRADUATES

- A. E. 200, 201. Special Problems in Farm Economics (2, 2). First and second semesters. DeVault.
- A. E. 202. Seminar (1). First and second semesters. DeVault.
- A. E. 203. Research. Credit according to work accomplished. Staff.
- A. E. 208. Agricultural Policy (3). Second semester. Beal.

- A. E. 210. Taxation in Relation to Agriculture (2). Second semester. Walker.
- A. E. 211. Agricultural Taxation in Theory and Practice (3). Two lectures and one laboratory period a week, first semester. Walker.
- A. E. 212, 213. Land Utilization and Agricultural Production (3, 3). Three hours a week, first and second semesters. Baker.
- A. E. 214. Consumption of Farm Products and Levels of Living (3). Second semester. Baker.
- A. E. 215. Advanced Agricultural Cooperation (3). First semester. Poffenberger.
- A. E. 216. Advanced Farm Management (3). Second semester. ———.
- A. E. 217. Agricultural Economics Research Techniques (2). First and second semesters. Hoecker.

AGRICULTURAL EDUCATION AND RURAL LIFE

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- R. Ed. 107. Observation and Analysis of Teaching for Agricultural Students (3). Two lectures and one laboratory period a week, second semester. Ahalt.
- R. Ed. 109. Teaching Secondary Vocational Agriculture (3). First semester. Ahalt.
- R. Ed. 111. Teaching Young and Adult Farmer Groups (1). First semester. Ahalt.
- R. Ed. 112. Departmental Management (1). One laboratory period a week, second semester. Prerequisites, R. Ed. 107, 109. Ahalt.
- R. Ed. 114. Rural Life and Education (3). Second semester. Ahalt.

FOR GRADUATES

- R. Ed. 201, 202. Rural Life and Education (3, 3). Three hours a week, first and second semesters. Prerequisite, R. Ed. 114, or equivalent. Ahalt.
- R. Ed. 207, 208. Problems in Vocational Agriculture (2, 2). Two hours a week, first and second semesters. Ahalt.
- R. Ed. 220. Field Problems in Rural Education (1-3). First and second semesters. Prerequisite, six semester hours of graduate study.
- R. Ed. 250. Seminar in Rural Education (1-2). First and second semesters. Ahalt.
- R. Ed. 251. Research. Credit according to work done. Ahalt.

AGRONOMY

A. Crops

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Agron. 103. Crop Breeding (2). First semester. Prerequisite, Zool. 104.
Ronningen.
- Agron. 151. Cropping Systems (2). Second semester. Kuhn.
- Agron. 152. Seed Production and Distribution (2). Second semester.
Liden.
- Agron. 153. Selected Crop Studies (2-4). First and second semesters.
Staff.

FOR GRADUATES

- Agron. 201. Crop Breeding (2-4). Two hours a week in addition to conference and assignments, second semester. Prerequisite, consent of instructor.
Ronningen.
- Agron. 203. Seminar (1). First and second semesters. Staff.
- Agron. 204. Technique in Field Crop Research (2). First semester.
Kuhn.
- Agron. 209. Research (4-8). Arranged. Staff.

B. Soils

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Soils 103. Soil Geography (3). Two lectures and one laboratory period a week, second semester. Prerequisites, Soils 1 and Geology.
Thomas and Gross.
- Soils 112. Soil Conservation (3). Two lectures and one discussion period a week, first semester. Prerequisite, Soils 1. Thomas.
- Soils 120. Soil Management (3). Two lectures and one laboratory period a week, second semester. Prerequisites, Soils 1 and 2.
Thomas and Gross.

FOR GRADUATES

- Soils 201. Special Problems and Research (10-12). Arranged. Thomas.
- Soils 202, 203. Soil Science (3, 3). Three hours a week, first and second semesters. Prerequisites, Soils 1 and 2, or equivalent.
Thomas and Axley.
- Soils 212, 213. Soil Research Technique (2, 2). Two three-hour laboratory periods a week, first and second semesters. Thomas and Axley.

ANIMAL HUSBANDRY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- A. H. 111. Animal Nutrition (3). First semester. Prerequisites, Chem. 31, 32, 33, 34; A. H. 110.

- A. H. 150. **Livestock Markets and Marketing (2)**. First semester. Prerequisite, A. H. 1.

FOR GRADUATES

- A. H. 120. **Principles of Breeding (3)**. Second semester. Two lectures and one laboratory period a week. Prerequisite, Zool. 104. Graduate credit with permission of instructor.
- A. H. 201. **Special Problems in Animal Husbandry (2-4)**. Credit in proportion to work accomplished. First or second semester. Staff.
- A. H. 202, 203. **Seminar (1, 1)**. First and second semesters. Staff.
- A. H. 204. **Research**. Credit in proportion to work accomplished. Staff.
- A. H. 205. **Advanced Breeding (2)**. Second semester. Prerequisite, Zool. 104; A. H. 120; one course in biological statistics.
- A. H. 206, 207. **Advanced Livestock Management (3, 3)**. Two lectures and one laboratory period a week. First and second semesters.

BACTERIOLOGY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Laboratory fees in Bacteriology are \$10.00 per course per semester.

- Bact. 101. **Pathogenic Bacteriology (4)**. Two lecture and two laboratory periods a week, first semester. Prerequisite, Bact. 5. Faber.
- Bact. 103. **Serology (4)**. Two lecture and two laboratory periods a week, second semester. Prerequisite, Bact. 101. Faber.
- Bact. 104. **History of Bacteriology (1)**. One lecture period a week, first semester. Prerequisite, a major or minor in bacteriology. Doetsch.
- Bact. 105. **Clinical Methods (4)**. Two lecture and two laboratory periods a week, first semester. Prerequisite, Bact. 103. Faber.
- Bact. 108. **Epidemiology and Public Health (3)**. Three lecture periods a week, second semester. Prerequisite, Bact. 101. Faber.
- Bact. 131. **Food Bacteriology (4)**. Two lecture and two laboratory periods a week, first semester. Prerequisite, Bact. 5. Laffer.
- Bact. 133. **Dairy Bacteriology (4)**. Two lecture and two laboratory periods a week, first semester. Prerequisite, Bact. 5. Doetsch.
- Bact. 135. **Soil Bacteriology (4)**. Two lecture and two laboratory periods a week, second semester. Prerequisite, Bact. 5. Hansen.
- Bact. 161. **Systematic Bacteriology (4)**. Two lecture and two laboratory periods a week, first semester. Prerequisite, 16 credits in bacteriology. Hansen.
- Bact. 181. **Bacteriological Problems (3)**. First and second semesters. Prerequisite, 16 credits in bacteriology. Registration only upon the consent of the instructor. Staff.

FOR GRADUATES

- Bact. 201. Advanced Pathogenic Bacteriology (4).** Two lecture and two laboratory periods a week, first semester. Prerequisite, 30 credits in bacteriology and allied fields, including Bact. 103. Laffer.
- Bact. 204. Bacterial Metabolism (2).** Two lecture periods a week, first semester. Prerequisite, 30 credits in bacteriology and allied fields, including Chem. 161 and 162. Pelczar.
- Bact. 206, 208. Special Topics (1, 1).** One lecture period a week, first and second semesters. Prerequisite, 20 credits in bacteriology. Staff.
- Bact. 231. Advanced Food Bacteriology (4).** Two lecture and two laboratory periods a week, first semester. Prerequisite, 30 credits in bacteriology, including Bact. 131. Laffer.
- Bact. 280. Seminar (1).** First and second semesters. Prerequisite, 30 credits in bacteriology. Staff.
- Bact. 291. Research.** First and second semesters. Prerequisite, 30 credits in bacteriology. Staff.

BOTANY

A. Plant Physiology

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Bot. 101. Plant Physiology (4).** Two lectures and two laboratory periods a week, first semester. Prerequisites, Bot. 1, and general chemistry. Laboratory fee, \$5.00. Gauch.
- Bot. 102. Plant Ecology (3).** Two lectures and one laboratory period a week, second semester. Prerequisite, Bot. 11, or equivalent. Brown.

FOR GRADUATES

- Bot. 201. Plant Biochemistry (2 or 4).** First semester. Prerequisites, Bot. 101, and elementary organic chemistry, or equivalent. (Laboratory only [2 credits] given 1949-1950.) Lectures prerequisite. Laboratory fee, \$5.00. Gauch.
- Bot. 202. Plant Biophysics (2).** First semester. Prerequisites, Bot. 101, and elementary physics, or equivalent. Gauch.
- Bot. 203. Biophysical Methods (2).** First semester. To accompany Bot. 202. Same prerequisites. Laboratory fee, \$5.00.
- Bot. 204. Growth and Development (2).** Second semester. Prerequisite, 12 semester hours of plant science.
- Bot. 205. Salt Nutrition Seminar (1).** Second semester. (Not given 1949-1950.) Gauch.
- Bot. 206. Research in Plant Physiology.** Credit according to work done. Gauch.

B. General Botany and Morphology

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Bot. 111. Plant Anatomy (3). One lecture and two laboratory periods a week, first semester. Prerequisite, Bot. 110, or equivalent. Laboratory fee, \$5.00. Rappleye.
- Bot. 113. Plant Geography (2). First semester. Prerequisite, Bot. 1, or equivalent. Brown.
- Bot. 114. Advanced Plant Taxonomy (3). One lecture and two laboratory periods a week, first semester. Prerequisite, Bot. 11, or equivalent. Laboratory fee, \$5.00. Brown.
- Bot. 115. Structure of Economic Plants (2). Two laboratory periods a week, second semester. Prerequisite, Bot. 111. Laboratory fee, \$5.00. Rappleye.
- Bot. 116. History and Philosophy of Botany (1). First semester. Prerequisite, 15 semester hours of botany. Bamford.
- Bot. 117. Plant Breeding (2). Second semester. Prerequisites. Zool. 104, or equivalent. Morgan.

FOR GRADUATES

- Bot. 211. Cytology (4). Two lectures and two laboratory periods a week, second semester. Prerequisites, Bot. 110, Zool. 104. Laboratory fee, \$5.00. Bamford, Morgan.
- Bot. 212. Plant Morphology (2). Two laboratory periods a week, first semester. Prerequisites, Bot. 11, Bot. 111, or equivalent. Laboratory fee, \$5.00. Rappleye.
- Bot. 213. Seminar (1). First and second semesters. Prerequisite, permission of instructor. Bamford.
- Bot. 214. Research. Credit according to work done. Bamford, Morgan.
- Bot. 215. Plant Cytogenetics (3). First semester. Prerequisites, Zool. 104, Bot. 211. Laboratory fee, \$5.00. Morgan.

C. Plant Pathology

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Bot. 122. Research Methods in Plant Pathology (2). Two laboratory periods a week, first and second semesters. Prerequisite, Bot. 20, or equivalent. Laboratory fee, \$5.00. Cox.
- Bot. 123. Diseases of Ornamental Plants (2). Second semester. Prerequisite, Bot. 20, or equivalent. Jeffers.
- Bot. 124. Diseases of Tobacco and Agronomic Crops (2). (Not offered 1949-1950.) Prerequisite, Bot. 20, or equivalent.

- Bot. 125. Diseases of Fruit Crops (2). First semester. Prerequisite, Bot. 20, or equivalent. Weaver.
- Bot. 126. Diseases of Vegetable Crops (2). (Not offered 1949-1950.) Prerequisite, Bot. 20, or equivalent. Cox.
- Bot. 128. Mycology (4). Two lectures and two laboratory periods a week, first semester. Prerequisite, Bot. 2, or equivalent. Laboratory fee, \$5.00. Jeffers.

FOR GRADUATES

- Bot. 221. Virus Diseases (3). Two lectures and one laboratory period a week, second semester. Prerequisites, Bot. 20, Bot. 101. Laboratory fee, \$5.00. Brierley.
- Bot. 222. Plant Nematology (2). Second semester. Two lectures. Prerequisite, Bot. 20, or equivalent. Steiner.
- Bot. 225. Research, Pathology. Credit according to work done. Staff.
- Bot. 226. Plant Disease Control (3). First semester. Prerequisite, Bot. 20, or equivalent. Cox.
- Bot. 229. Seminar, Pathology (1). First and second semester. Jeffers.

BUSINESS AND PUBLIC ADMINISTRATION

A. Business Administration

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- B. A. 110, 111. Intermediate Accounting (3, 3). First and second semesters. Prerequisite, a grade of B or better in B. A. 21, or consent of instructor.
- B. A. 116. Public Budgeting (3). Prerequisites, B. A. 21 and Econ. 32.
- B. A. 118. Governmental Accounting (3). Prerequisite, B. A. 111.
- B. A. 121. Cost Accounting (4). Second semester. Prerequisite, a grade of B or better in B. A. 21, or consent of instructor.
- B. A. 122. Auditing Theory and Practice (3). First semester. Prerequisite, B. A. 111.
- B. A. 123. Income Tax Accounting (4). First semester. Prerequisite, a grade of B or better in B. A. 21, or consent of instructor.
- B. A. 124, 126. Advanced Accounting (3, 3). First and second semesters. Prerequisite, B. A. 111.
- B. A. 125. C. P. A. Problems (3). Second semester. Prerequisite, B. A. 124, or consent of instructor.
- B. A. 127. Advanced Auditing Theory and Practice (3). Second semester. Prerequisite, B. A. 122.

- B. A. 129. Apprenticeship in Accounting (0).
- B. A. 130. Elements of Business Statistics (3). First semester.
- B. A. 131. Statistics Laboratory.
- B. A. 132, 133. Advanced Business Statistics (3, 3). Three hours a week, first and second semesters. Prerequisite, B. A. 130.
- B. A. 140. Financial Management (3). Second semester. Prerequisite, Econ. 140.
- B. A. 141. Investment Management (3). First semester. Prerequisite, B. A. 140.
- B. A. 142. Banking Policies and Practices (3). Second semester. Prerequisite, Econ. 140.
- B. A. 143. Credit Management (3). Second semester. Prerequisite, B. A. 140.
- B. A. 144. Life, Group and Social Insurance (2). First semester. Prerequisite, Econ. 32 or 37.
- B. A. 145. Property, Casualty, and Liability Insurance (2). First semester. Prerequisite, Econ. 32 or 37.
- B. A. 146. Real Estate Financing and Appraisals (2). Second semester. Prerequisites, Econ. 32 or 37, B. A. 156.
- B. A. 147. Business Cycles (3). Second semester. Prerequisite, Econ. 140.
- B. A. 150. Marketing Management (3). Second semester. Prerequisite, Econ. 150.
- B. A. 151. Advertising Programs and Campaigns (2). First semester. Prerequisite, B. A. 150.
- B. A. 152. Advertising Copy Writing and Layout (2). Second semester. Prerequisite, B. A. 151.
- B. A. 153. Purchasing Management (3). First semester. Prerequisite, B. A. 150.
- B. A. 154. Retail Store Management (3). Second semester. Prerequisite, Econ. 150.
- B. A. 156. Real Estate Principles and Practice (2). First semester. Prerequisite, Econ. 32 or 37.
- B. A. 157. Foreign Trade Procedure (3). Prerequisite, B. A. 150.
- B. A. 160. Personnel Management (3). Second semester. Prerequisite, Econ. 160.
- B. A. 162. Contemporary Trends in Labor Relations (3). First semester. Prerequisite, B. A. 160.

- B. A. 163. Industrial Relations (3).** Second semester. Prerequisite, Econ. 160.
- B. A. 164. Recent Labor Legislation and Court Decisions (3).** Second semester. Prerequisite, Econ 160. B. A. 160 recommended.
- B. A. 165. Office Management (3).** First semester. Prerequisite, B. A. 11 or junior standing.
- B. A. 166. Business Communications (3).** Second semester. Prerequisite, junior standing.
- B. A. 167. Job Evaluation and Merit Rating (2).** Prerequisite, B. A. 160.
- B. A. 169. Industrial Management (3).** Second semester. Prerequisite, B. A. (11) and 160.
- B. A. 170. Transportation I, Regulation of Transportation Services (3).** First semester. Prerequisite, Econ. 32 or 37
- B. A. 171. Transportation II, Services, Rules, and Practices (3).** Prerequisite, B. A. 170.
- B. A. 172. Transportation III, Motor Transportation (3).** Prerequisite, B. A. 171.
- B. A. 173. Transportation IV, Overseas Shipping (3).** Prerequisite, B. A. 170.
- B. A. 174. Commercial Air Transportation (3).** Prerequisite, B. A. 170.
- B. A. 175. Airline Administration (3).** Prerequisite, B. A. 174.
- B. A. 176. Problems in Airport Management (3).** Prerequisite, B. A. 174.
- B. A. 177. Motion Economy and Time Study (3).** Prerequisite, B. A. 169.
- B. A. 178. Production Planning and Control (2).** Prerequisite, B. A. 169.
- B. A. 179. Problems in Supervision (3).** Prerequisite, B. A. 169.
- B. A. 180. 181. Business Law (4, 4).** First and second semesters. Prerequisite, senior standing. Required in all Bus. Adm. curriculums.
- B. A. 183. Law for Accountants (2).** Prerequisite, B. A. 181.
- B. A. 184. Public Utilities (3).** Second semester. Prerequisite, Econ. 32 or 37 and senior standing.
- B. A. 186. Real Estate Law and Conveyancing (2).** Prerequisite, B. A. 156 and 180.
- B. A. 189. Government and Business (3).** First semester. Prerequisite, Econ. 32 or 37. Senior standing.

FOR GRADUATES

- B. A. 220. Managerial Accounting (3).**
- B. A. 221, 222. Seminar in Accounting.** Arranged.

- B. A. 226. Accounting Systems (3).
- B. A. 228. Research in Accounting.
- B. A. 229. Studies of Special Problems in the Fields of Control and Organization.
- B. A. 240. Seminar in Financial Management (1-3).
- B. A. 260. Problems in Sales Management (3).
- B. A. 251. Problems in Advertising (3).
- B. A. 252. Problems in Retail Store Management (3).
- B. A. 257. Seminar in Marketing Management.
- B. A. 258. Research in Marketing.
- B. A. 262. Seminar in Contemporary Trends in Labor Relations.
- B. A. 265. Development and Trends in Modern Industrial Management (3).
- B. A. 266. Research in Personnel Management.
- B. A. 267. Research in Industrial Relations.
- B. A. 270. Seminar in Air Transportation (3).
- B. A. 271. Theory of Organization (3).
- B. A. 277. Seminar in Transportation (3).
- B. A. 280. Seminar in Business and Government Relationships.
- B. A. 284. Seminar in Public Utilities (3).
- B. A. 299. Thesis.

B. Economics

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Econ. 131. Comparative Economic Systems (3). Second semester. Prerequisite, Econ. 32 or 37.
- Econ. 132. Advanced Economic Principles (3). First semester. Prerequisite, Econ. 32.
- Econ. 134. Contemporary Economic Thought (3). Second semester. Prerequisite, Econ. 32.
- Econ. 136. International Economic Policies and Relations (3). First semester. Prerequisite, Econ. 32 or 37. Econ. 131 recommended.
- Econ. 137. Economic Planning and Post-war Problems (3). Second semester. Prerequisite, Econ. 32 or 37. Econ. 131 recommended.
- Econ. 140. Money and Banking (3). First semester. Prerequisite, Econ. 32 or 37.
- Econ. 141. Theory of Money, Credit, and Prices (3). Second semester. Prerequisites, Econ. 32 and 140.

- Econ. 142. Public Finance and Taxation (3).** First semester. Prerequisite, Econ. 32 or 37.
- Econ. 149. International Finance and Exchange (3).** Second semester. Prerequisite, Econ. 140. Econ. 141 recommended.
- Econ. 150. Marketing Principles and Organization (3).** First semester. Prerequisite, Econ. 32 or 37.
- Econ. 160. Labor Economics (3).** First semester. Prerequisite, Econ. 32 or 37.
- Econ. 161. Government and Social Security (3).** Second semester. Prerequisites, G. & P. 4, Econ. 32.
- Econ. 170. Monopoly and Competition (3).** Second semester. Prerequisite, Econ. 32 or 37.
- Econ. 171. Economics of American Industry (3).** Second semester. Prerequisite, Econ. 32 or 37.

FOR GRADUATES

- Econ. 230. History of Economic Thought (3).** First semester. Prerequisite, Econ. 132.
- Econ. 231. Economic Theory in the Nineteenth Century (3).** Second semester. Prerequisite, Econ. 230 or consent of instructor.
- Econ. 235. Seminar in International Economic Relations (3).**
- Econ. 237, 238. Seminar in Economic Investigation (3, 3).** Three hours a week, first and second semesters.
- Econ. 240. Comparative Banking Systems (3).** Second semester.
- Econ. 242. Research in Governmental Fiscal Policies and Practices (3).**
- Econ. 270. Seminar in Economics and Geography of American Industries (3).**
- Econ. 299. Thesis.** Arranged

C. Geography

- Geog. 100, 102. Regional Geography of the United States and Canada (3, 3).** First and second semesters. Prerequisites, Geog. 1, 2 or Geog. 60, 61, or permission of instructor. Baker.
- Geog. 102. The Geography of Manufacturing in the United States and Canada (3).** First semester. Clemens.
- Geog. 110, 111. Latin America (3, 3).** First and second semesters. Crist.
- Geog. 115. The Peoples of Latin America (2).** Second semester. Crist.

- Geog. 120. Economic Geography of Europe (3). First semester.
Van Royen.
- Soc. 120, 121. Population. See Sociology.
- Geog. 122. Economic Resources and Development of Africa (3). Second semester.
Van Royen.
- Geog. 123. Problems of Colonial Geography (3). First or second semester.
Van Royen.
- Geog. 130, 131. Economic and Political Geography of Southern and Eastern Asia (3, 3). First and second semesters.
Hu.
- Geog. 140, 141. Soviet Lands (3, 3). First and second semesters.
- Geog. 150. Problems of Map Evaluation I, Topographic Maps (3). First semester.
Davies (Army Map Service).
- Geog. 151. Problems of Map Evaluation II, Non-topographic Special-use Maps (3). Second semester. Prerequisite, Geog. 150.
Brierly (Army Map Service).
- Geog. 152. Problems and Practices of Photo Interpretation (3). Off-campus. First or second semester. Prerequisite, Geog. 31, or equivalent
- Geog. 160. Elementary Toponymy (3). First and second semesters. Prerequisite, Geog. 30 and one foreign language.
Aiken (Army Map Service).
- Geog. 162. Fundamentals of Climatology (3). First semester. Baum.
- Geog. 170. Field Studies in Geography (3). First semester and approximately three weeks in the field immediately preceding the academic year.
Staff.
- Geog. 180, 181. History, Nature and Methodology of Geography (3, 3). First and second semesters.
Hu.
- Geog. 190, 191. Proseminar in Geography (3, 3).
Staff.

FOR GRADUATES

- Geog. 210. Seminar in Cartography (3).
Karinen.
- Geog. 220. Advanced Geomorphology (3). Second semester. Van Royen.
- Geog. 230. Micro-Climatology (3). First semester. Prerequisite, Geog. 162 or consent of instructor.
Baum.
- Geog. 231. Advanced General Climatology (3). Second semester. Prerequisite, Geog. 162 or consent of instructor.
Baum.
- Geog. 248, 249. Special Studies in Meteorology and Climatology (3, 3).
Baum.

- Geog. 250, 251. Recent Economic Trends in Latin America (3, 3). First and second semester Crist.
- Geog. 260, 261. Problems in the Geography of Europe and Africa (3, 3). First and second semesters. Van Royen.
- Geog. 270, 271. Special Studies in the Geography of China (3, 3). First and second semesters. Hu.
- Geog. 290, 291. Seminar in Geography. Credit to be arranged. First and second semesters. Staff.
- Geog. 292, 293. Research Work. (Credit to be arranged.) First and second semesters and summer.
- A. E. 212, 213. Land Utilization and Agricultural Production. See Agricultural Economics. Baker.

In addition to individual research projects, the preparation of the "Atlas of the World's Agricultural and Mineral Resources," a joint project of the University of Maryland, the United States Department of Agriculture, and the Department of the Interior, as well as cooperative projects with other government departments, provide facilities for graduate students to study under the guidance of experts in government service. The University of Maryland is cooperating also with the National Central University, in Nanking, China, in the preparation of an "Atlas of China." These atlases and other projects in preparation, may provide a vehicle of publication for parts of students' research work.

D. Government and Politics

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- G. and P. 101. International Political Relations (3). First semester. Prerequisite, G. and P. 1. Plischke.
- G. and P. 102. International Law (3). Second semester. Prerequisite, G. and P. 1. Plischke.
- G. and P. 105. Recent Far Eastern Politics (3). First semester. Prerequisite, G. and P. 1. Steinmeyer.
- G. and P. 106. American Foreign Relations (3). First semester. Prerequisite, G. and P. 1. Plischke.
- G. and P. 110. Principles of Public Administration (3). First semester. Prerequisite, G. and P. 1. Ray.
- G. and P. 111. Public Personnel Administration (3). Second semester. Prerequisite, G. and P. 1. Mauck.
- G. and P. 112. Public Financial Administration (3). Second semester. Prerequisite, G. and P. 110 or Econ. 142. Mauck.

- G. and P. 124. Legislatures and Legislation (3). Second semester. Pre-
 requisite, G. and P. 1. Burdette.
- G. and P. 131, 132. Constitutional Law (3, 3). First and second semes-
 ters. Prerequisite, G. and P. 1. Dixon.
- G. and P. 133. Administration of Justice (3). Second semester. Pre-
 requisite, G. and P. 1. Dixon.
- G. and P. 141. History of Political Theory (3). First semester. Pre-
 requisite, G. and P. 1. Dixon.
- G. and P. 142. Recent Political Theory (3). Second semester. Prerequi-
 site, G. and P. 1. Dixon.
- G. and P. 144. American Political Theory (3). First semester. Prerequi-
 site, G. and P. 1. LaFuze.
- G. and P. 154. Problems of World Politics (3). Second semester. Pre-
 requisite, G. and P. 1. Steinmeyer.
- G. and P. 174. Political Parties (4). First semester. Prerequisite, G. and
 P. 1. Burdette.
- G. and P. 178. Public Opinion (3). First semester. Prerequisite, G. and
 P. 1. Burdette.
- G. and P. 181. Administrative Law (3). Second semester. Prerequisite,
 G. and P. 1. Ray.

FOR GRADUATES

- G. and P. 201. Seminar in International Political Organization (3).
 Steinmeyer.
- G. and P. 211. Seminar in Federal-State Relations (3). Ray.
- G. and P. 213. Problems of Public Administration (3). Ray.
- G. and P. 214. Problems of Public Personnel Administration (3). Mauck.
- G. and P. 216. Seminar in Government Administrative Planning and Man-
 agement (3). Mauck.
- G. and P. 217. Government Corporations and Special Purpose Authorities
 (3). Mauck.
- G. and P. 221. Seminar in Public Opinion (3). Burdette.
- G. and P. 224. Seminar in Political Parties and Politics (3). Burdette.
- G. and P. 225. Man and the State (3). Dixon.
- G. and P. 231. Seminar in Public Law (3). Ray.
- G. and P. 251. Bibliography of Government and Politics (3). Staff.
- G. and P. 261. Research in Government and Politics (3). Staff.

- G. and P. 281. Departmental Seminar (No Credit). Registration for two semesters required for doctoral candidates. Staff.
- G. and P. 299. Thesis Course. Arranged. Staff.

CHEMISTRY

Laboratory fees in Chemistry are \$10.00 per course per semester.

A. Analytical Chemistry

FOR GRADUATES

- Chem. 206, 208. Spectrographic Analysis (1, 1). One three-hour laboratory a week. Prerequisite, Chem. 188, 190 and consent of the instructor. Registration limited. Prerequisite, consent of instructor. White.
- Chem. 221, 223. Chemical Microscopy (2, 2). One lecture and three one-hour laboratory period a week, first and second semesters. Registration limited. Prerequisite, consent of instructor. Stuntz.
- Chem. 225. Polarography (2). Two lectures a week.
- Chem. 226, 228. Advanced Quantitative Analysis (2, 2). Two three-hour laboratory periods a week, first and second semesters. Prerequisite, consent of instructor. Stuntz.
- Chem. 266. Biological Analysis (2). Two three-hour laboratory periods a week, second semester. Prerequisites, Chem. 19, 31, 32, 33, 34. Wiley.

B. Biochemistry

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Chem. 161, 163. Biochemistry (2, 2). Two lectures a week, first and second semesters. Prerequisites, Chem. 31, 33, or Chem. 35, 37.
- Chem. 162, 164. Biochemistry Laboratory (2, 2). Two three-hour laboratory periods a week, first and second semesters. Prerequisites, Chem. 32, 34, or Chem. 36, 38.

FOR GRADUATES

- Chem. 261, 263. Advanced Biochemistry (2, 2). Two lectures a week, first and second semesters. Prerequisites, Chem. 141, 143, or consent of instructor. Veitch.
- Chem. 262, 264. Advanced Biochemistry Laboratory (2, 2). Two three-hour laboratory periods a week, first and second semesters. Prerequisite, consent of the instructor. Veitch.
- Chem. 268. Special Problems in Biochemistry (2-4). Two to four three-hour laboratory periods a week, first and second semesters. Prerequisites, Chem. 161, 162, 163, 164 and consent of the instructor. Veitch.

C. Inorganic Chemistry

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Chem. 101. Advanced Inorganic Chemistry (2). Two lectures a week, second semester. Prerequisites, Chem. 23 and 37, 38.

FOR GRADUATES

Chem. 201, 203. The Chemistry of Rarer Elements (2, 2). Two lectures a week, first and second semesters. White.

Chem. 202, 204. Advanced Inorganic Laboratory (2, 2). Two three-hour laboratory periods a week, first and second semesters.

Chem. 205. Radiochemistry (2). Two lectures a week. Rollinson.

Chem. 207. Chemistry of Inorganic Complex Compounds (2). Two lectures a week.

Chem. 210. Radiochemistry Laboratory (1 or 2). One or two three-hour laboratory periods a week. Registration limited. Prerequisites, Chem. 205 (or concurrent registration therein) and consent of instructor. Rollinson.

Chem. 239. Physical Techniques in Chemistry (2). A survey of the tools available for the solution of chemical problems by means of physical techniques.

D. Organic Chemistry

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Chem. 141, 143. Advanced Organic Chemistry (2, 2). Two lectures a week, first and second semesters. Prerequisites, Chem. 37, 38.

Chem. 142, 144. Advanced Organic Laboratory (2, 2). Two three-hour laboratory periods a week, first and second semesters. Prerequisites, Chem. 19 or 23, and Chem. 37, 38.

Chem. 146, 148. The Identification of Organic Compounds (2, 2). Two three-hour laboratory periods a week, first and second semesters. Prerequisites, Chem. 141, 143, or concurrent registration therein.

Chem. 150. Organic Quantitative Analysis (2). Two three-hour laboratory periods per week. The semi-micro determination of carbon, hydrogen, nitrogen, halogen and certain functional groups. First and second semesters.

(One or more courses from the following group 241-257 will customarily be offered each semester. Two of these courses will be presented in the academic year (1949-1950).

Chem. 241. Stereochemistry (2). Two lectures a week. Woods.

Chem. 245. The Chemistry of the Steroids (2). Two lectures a week. Pratt.

- Chem. 249. Physical Aspects of Organic Chemistry (2). Two lectures a week. Woods.
- Chem. 251. The Heterocyclics (2). Two lectures a week. Pratt.
- Chem. 253. Organic Sulfur Compounds (2). Two lectures a week. Dewey.
- Chem. 254. Advanced Organic Preparations (2 to 4). Two to four three-hour laboratory periods a week, first and second semesters.
- Chem. 257. Organic Laboratory Methods (2). Two lectures a week. Pratt.
- Chem. 258. The Identification of Organic Compounds, an Advanced Course (2 to 4). Two to four three-hour laboratory periods a week, first and second semesters. Pratt.
- Chem. 260. Advanced Organic Laboratory (1 or 2). One or two three-hour laboratory periods per week, first and second semesters. Pratt.
- Chem. 271. Glassblowing Laboratory (1). A practical course designed to teach the student elementary glassblowing. First and second semesters. Carruthers.

E. Physical Chemistry

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Chem. 181, 183. Elements of Physical Chemistry (2, 2). Two lectures a week, first and second semesters. Prerequisites, Chem. 19; Phys. 1, 2; Math. 10, 11.
- Chem. 182, 184. Elements of Physical Chemistry Laboratory (1, 1). One three-hour laboratory period a week, first and second semesters. May be taken ONLY when accompanied by Chem. 181, 183.
- Chem. 187, 189. Physical Chemistry (3, 3). Three lectures a week, first and second semesters. Prerequisites, Chem. 19 or 21; Phys. 20, 21; Math. 20, 21.
- Chem. 188, 190. Physical Chemistry Laboratory (2, 2). Two three-hour laboratory periods a week, first and second semesters. A laboratory course for students taking Chem. 187, 189.

FOR GRADUATES

The common prerequisites for the following courses are Chem. 187, 189, and 188, 190, or their equivalent.

One or more courses of the group, 281-307, will be offered each semester, depending on demand.

- Chem. 281, 283. Theory of Solutions (2, 2). Two lectures a week, first and second semesters. Prerequisite, Chem. 307. Svrbely.
- Chem. 285. Colloid Chemistry (2). Two lectures a week. Pickard.

- Chem. 295. Heterogenous Equilibria (2). Two lectures a week. Pickard.
- Chem. 299. Reaction Kinetics (3). Three lectures per week. Svirbely.
- Chem. 303. Electrochemistry (3). Three lectures a week. Pickard.
- Chem. 304. Electrochemistry Laboratory (2). Two three-hour laboratory periods a week. Prerequisite, consent of instructor. Staff.
- Chem. 307. Chemical Thermodynamics (3). Three lectures a week. Svirbely.
- Chem. 311. Physicochemical Calculations (2). Two lectures per week. Pickard.
- Chem. 313. Molecular Structure (2). Two lectures per week. Brown.
- Chem. 321. Quantum Chemistry (3). Three lectures a week. Brown.
- Chem. 323. Statistical Mechanics and Chemistry (3) Three lectures a week. Brown.
- F. Seminar and Research
- Chem. 351. Seminar (1). First and second semesters. Staff.
- Chem. 360. Research. First and second semesters, summer session. Staff.

COMPARATIVE LITERATURE

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Comp. Lit. 101. Introductory Survey of Comparative Literature (3). First semester. Zucker.
- Comp. Lit. 102. Introductory Survey of Comparative Literature (3). Second semester. Zucker.
- Comp. Lit. 103. The Old Testament as Literature (3). Second semester. Zucker.
- Copm. Lit. 104. Chaucer (3). First semester. Same as Eng. 104. Harman.
- Comp. Lit. 105. Romanticism in France (3). First semester. Staff.
- Comp. Lit. 106. Romantisicm in Germany (3). Second semester. Prahl.
- Comp. Lit. 107. The Faust Legend in English and German Literature (3). First semester. Prahl.
- Comp. Lit. 108. Some Non-English Influences on American Literature (3). Second semester. Zucker.
- Comp. Lit. 109. Cervantes (3). Second semester. Staff.
- Comp. Lit. 112. Ibsen (3) First semester. Zucker.
- Comp. Lit. 113. Prose of the Renaissance (3). Second semester. Same as Eng. 113. (Not offered in 1949-1950). Zeerveld.

- Comp. Lit. 114. The Greek Drama (3). First semester. Prahl.
- Comp. Lit. 121. Milton (3). Same as Eng. 121. Murphy.
- Comp. Lit. 129, 130 Literature of the Romantic Period (3, 3) Three hours a week, first and second semesters. Same as Eng. 129, 130. Weber.
- Comp. Lit. 144. Modern Drama (3). First semester. Same as Eng. 144. Weber.
- Comp. Lit. 145. The Modern Novel (3). Second semester. Same as Eng. 145. Cardwell.
- Comp. Lit. 155, 156. Four Major American Writers (3, 3). Three hours a week, first and second semesters. Same as Eng. 155, 156. Gravely.

FOR GRADUATES

- Comp. Lit. 201. Bibliography and Methods (3). First semester. Same as Eng. 201. Mooney.
- Comp. Lit. 202. The History of the Theatre (3) Second semester. Zucker.
- Comp. Lit. 203. Schiller (3). Same as German 204. Prahl.
- Comp. Lit. 204. Medieval Romances (3). First semester. Same as Eng. 204. (Not offered in 1949-1950.)
- Comp. Lit. 205. Georges Duhamel, Poet, Dramatist, Novelist (3). First semester. Same as French 204. Falls.
- Comp. Lit. 206, 207. Seminar in Sixteenth Century Literature (3, 3). First and second semesters. Same as Eng. 206 and 207. McManaway.
- Comp. Lit. 208. The Philosophy of Goethe's Faust (3). Same as German 208. Zucker.
- Comp. Lit. 216, 217. Literary Criticism (3, 3). Three hours a week, first and second semesters. Same as Eng. 216, 217. Staff.
- Comp. Lit. 227, 228. Problems in American Literature (3, 3). Same as Eng. 227, 228. (Not offered in 1949-1950.)

DAIRY

- Dairy 100. Dairy Cattle Management (1). One laboratory period a week, first semester. Prerequisite, Dairy 1. Cairns.
- Dairy 101. Dairy Production (3). Two lectures and one laboratory period a week, second semester. Prerequisites, Dairy 1, and A. H. 110. Cairns.
- Dairy 105. Dairy Breeds and Breeding (2). First semester. Prerequisites, Dairy 1, Zool. 104, A. H. 120. Cairns.

- Dairy 108. Dairy Technology (4).** Two lectures and two laboratory periods a week, first semester. Prerequisites, Dairy 1, Bact. 133, Chem. 1, 3. Laboratory fee, \$3.00. Gould, Johnson.
- Dairy 109. Market Milk (4).** Two lectures and two laboratory periods a week, second semester. Prerequisites, Dairy 1, Bact. 1, 133, Chem. 1, 3. Laboratory fee, \$3.00. Gould, Johnson.
- Dairy 110. Butter and Cheese Making (4).** Two lectures and two laboratory periods a week, second semester. Prerequisites, Dairy 1, Bact. 1, Chem. 1, 3. (Alternate years, not given in 1949-1950.) Warren.
- Dairy 111. Concentrated Milk Products (2).** One lecture and one laboratory period a week, second semester. Prerequisites, Dairy 1, 108, 114. (Alternate years, not given in 1949-1950.) Laboratory fee, \$3.00. Warren.
- Dairy 112. Ice Cream Making (4).** Two lectures and two laboratory periods a week, first semester. Prerequisites, Dairy 1, 108, 114. Warren.
- Dairy 114. Special Laboratory Methods (4).** Two lectures and two laboratory periods a week, second semester. Prerequisites, Dairy 1, 108, Bact. 1, 133, Chem. 1, 3, 19, 31, 32, 33, 34. Laboratory fee, \$3.00. Gould, Johnson.
- Dairy 120, 121. Dairy Seminar (1, 1).** One hour a week, first and second semesters. Prerequisites, students majoring in Dairy Husbandry, Dairy 1, 101; students majoring in Dairy Products Technology, Dairy 1, 108. Cairns.
- Dairy 124. Special Problems in Dairying (2-4).** First and second semesters. Prerequisites, students majoring in Dairy Husbandry, Dairy 1, 101; students majoring in Dairy Products Technology, Dairy 1, 108, 109. Credit in accordance with the amount and character of work done. Staff.
- Dairy 201. Advanced Dairy Production (3).** First semester. Prerequisite, Dairy 101, or equivalent. Cairns.
- Dairy 202. Advanced Dairy Technology (3).** First semester. Prerequisites, Dairy 108, 114, or equivalent. Gould.
- Dairy 204. Methods of Dairy Research (1-5).** First and second semesters. Prerequisite, permission of professor in charge of work. Staff.
- Dairy 205. Seminar (1).** First and second semesters. Staff.
- Dairy 208. Research (3-8).** Credit to be determined by amount and quality of work done. Staff.

EDUCATION

A student in Education has the option of qualifying for the degree of Master of Arts or for the degree of Master of Education.

Special Departmental Requirements and Information

MASTER OF ARTS AND MASTER OF EDUCATION

Students who do not complete the requirements for the Master's degree in Education within six years of the date of matriculation may be required to take supplementary course work at the rate of two semester hours for each year the completion of the course requirements is deferred beyond six years, or to take special examinations based upon up-to-date materials in courses more than six years old.

A qualifying written examination is required of all candidates for a degree, to be taken after the student has successfully completed ten semester hours, and before he has completed nineteen hours (Master of Arts), or twenty-five hours (Master of Education). This examination covers the general information a student should have in the field of education. To assist in the choice of reading in preparation for the examination, a reading list has been prepared and is available in the office of the College of Education. The examination is usually given on the third Saturday of January and May and on the fourth Saturday on July, simultaneously at College Park and Baltimore.

Candidates for the degree of Master of Education who are high school teachers not preparing for administrative positions are advised to take at least twelve semester hours in their subject fields.

In addition to the general requirements for admission, applicants for unconditional admission with a major in Education must have had sixteen semester hours of undergraduate work in Education of acceptable quality, equivalent in character to the eighteen hours required in the junior and senior years of the University of Maryland.

DOCTORAL DEGREES

The Department of Education offers work towards degrees of Doctor of Philosophy and Doctor of Education.

Each candidate is required to achieve exceptional ability in at least one major area of competence. For the Ph.D., he must, in addition, achieve competence in at least one minor area outside the field of education. For both degrees, the candidate is required to develop competence in approximately six areas, including the major and minor. The choice of specific areas is optional with the student and his faculty adviser.

The areas of specialization in education from which a student may select his major, his minor, and approximately four other areas of competence, are as follows:

Adult Education	Home Economics Education
Curriculum and Instruction	Human Growth and Development
Educational Administration and Supervision	Industrial Arts Education
Elementary Education	Nursery School Education
Guidance and Personnel	Research Principles and Techniques
Health and Physical Education	Secondary Education
Higher Education	Vocational-Industrial Education
History, Philosophy, and Comparative Education	

In addition to the general University requirements for a doctor's degree the following additional requirements must be met by students proposing to major in one of the above fields.

1. Qualifying examination, oral or written, or both, at the discretion of the department, covering student's undergraduate and first year of graduate preparation, in education and related fields, to be taken as soon as possible after completion of the first year of graduate work and in any event required before receiving the department's official permission to take work beyond the Master's degree with the purpose of applying for candidacy for the doctorate.

2. The preliminary examination for admission to candidacy for the doctor's degree will include a written examination covering the student's preparation in major and minor fields, and an oral examination covering his plan of research for the doctoral dissertations or project.

In general the requirements for the Doctor of Education degree are the same as those for the degree Doctor of Philosophy. The most important difference between the two degrees are as follows:

1. The purpose of the Doctor of Education degree is to prepare persons of exceptional competence to work in the field. The emphasis for this degree is placed on broad understanding, whereas that for the degree of Doctor of Philosophy is placed on specialized research.

2. A reading knowledge of foreign languages is required for the degree of Doctor of Education only when needed for research and study in the doctoral program.

3. In meeting residence requirements, a candidate for the Ed.D. degree may substitute two summers of residence for one semester of residence or four summers for two semesters.

4. The doctoral study for the Ed. D. consists of a project rather than a dissertation. The project requires research to meet a practical field problem. Credit of six to nine hours is allowed for a project as compared with twelve to eighteen hours for a Ph.D. dissertation.

A. History, Principles, Curriculum, and Administration

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Ed. 100. History of Education I (2). First semester Wiggin.
- Ed. 101. History of Education II (2).
- Ed. 102. History of Education in the United States (2). Second semester. Wiggin.
- Ed. 105. Comparative Education—European (2). First semester. Benjamin.
- Ed. 106. Comparative Education—Latin America (2). Second semester. Benjamin.
- Ed. 107. Philosophy of Education I (2).
- Ed. 108. Philosophy of Education II (2).
- Ed. 110. The Teacher and School Administration (2).
- Ed. 114. Educational Foundations (2).
- Ed. 121. The Language Arts in the Elementary School (2).
- Ed. 122. The Social Studies in the Elementary School (2).
- Ed. 123. The Child and the Curriculum (2).
- Ed. 124. Creative Expression in the Elementary School (2).
- Ed. 125. Creative Expression in the Elementary School II (2). Prerequisite, Ed. 124 or taken concurrently.
- Ed. 126. The Elementary School Curriculum (2).
- *Ed. 130. Theory of the Junior High School (2). Newell.
- *Ed. 131. Theory of the Senior High School (2). Newell.
- Ed. 133. Methods of Teaching the Social Studies (2). Offered in Baltimore.
- Ed. 134. Materials and Procedures for the Senior High School Core Curriculum (2).
- Ed. 140. Curriculum, Instruction, and Observation (3). Second semester. Staff.

Graduate credit is allowed only by special permission. Separate sections are offered in the following subject-matter areas: English, Social Studies, Foreign Languages, Science, Mathematics, Art Education, Business Education, Industrial Education, Music Education, Nursing Education, Physical Education for Men, and Physical Education for Women.

* Credit is accepted for Ed. 130 or for Ed. 131, but not for both courses.

- Ed. 141. High School Course of Study—English (2). Bryan.
- Ed. 142. High School Course for Study—Literature (2). Bryan.
- Ed. 144. Materials and Procedure for the Junior High School Core Curriculum (2).
- Ed. 145. Principles of High School Teaching (2). First and second semesters. Brechbill.
- Ed. 146. The Teaching of Physics (3). Second semester. Laboratory fee, \$6.00. R. Morgan
- Ed. 147. Audio-Visual Education (2). First semester. Laboratory fee, \$1.00. Brechbill.
- Ed. 150. Educational Measurement (2). First and second semesters. Brechbill.
- Ed. 151. Remedial Reading Instruction (2). Schindler.
- Ed. 152. The Adolescent: Characteristics and Problems (2).
- Ed. 153. The Improvement of Reading (2). Schindler.
- Ed. 160. Educational Sociology—Introductory (2). First and second semesters. Schindler.
- Ed. 161. Guidance in Secondary Schools (2). Sievers.
- Ed. 162. Mental Hygiene in the Classroom (2).
- Ed. 170. Introduction to Special Education (2).
- Ed. 171. Education of Retarded and Slow-Learning Children (2).
- Ed. 183. Recent Trends in Curriculum and Methods in Elementary School (2).
- Ed. 184. Outdoor Education (6).
in summer.
- Ed. 191. Principles of Adult Education (2). Wiggin.
- Ed. 195. Teaching Traffic Safety and Automobile Operation (2). Offered in Summer School.

FOR GRADUATES

- Ed. 203. Problems in Higher Education (2). Benjamin.
- Ed. 205. Seminar in Comparative Education (2). Benjamin.
- Ed. 207. Seminar in Philosophy of Education (2).
- Ed. 209. Seminar in History of Education (2). Wiggin.
- Ed. 210. The Organization and Administration of Public Education (2).
First semester. Newell.

- Ed. 211. The Organization, Administration, and Supervision of Secondary Schools (2). Second semester. Newell.
- Ed. 212. School Finance and Business Administration (2). VanZwoll
- Ed. 213. Administration and Teaching in Junior High School (2).
- Ed. 214. School Buildings and Equipment (2). VanZwoll.
- Ed. 215. Public Education in Maryland (2). Newell.
- Ed. 216. High School Supervision (2). Newell.
- Ed. 217. Administration and Supervision in Elementary Schools (2).
- Ed. 218. School Surveys (2-6). Newell.
- Ed. 219. Seminar in School Administration (2). VanZwoll.
- Ed. 220. Pupil Transportation (2).
- Ed. 221. Functional School Plant Planning (2). VanZwoll.
- Ed. 222. Seminar in Supervision (2). Newell.
- Ed. 223. Practicum in Personnel Relationships (2-6). Newell.
- Ed. 224. Internship in School Administration (12-16). Newell.
- Ed. 225. School Public Relations (2). VanZwoll.
- Ed. 226. Child Accounting (2). VanZwoll.
- Ed. 227. Public School Personnel Administration (2). VanZwoll.
- Ed. 229. Seminar in Elementary Education (2). Schindler.
- Ed. 232. Student Activities in the High School (2).
- Ed. 236. Curriculum Development in the Secondary School (2).
- Ed. 239. Seminar in Secondary Education (2).
- Ed. 242. Coordination in Work-Experience Programs (2). Brown.
- Ed. 243. Application of Theory and Research to Arithmetic in Elementary Schools (2). Schindler.
- Ed. 244. Application of Theory and Research to the Language Arts in Elementary Schools (2). Schindler.
- Ed. 245. Applications of Theory and Research to High School Teaching (2). Brechbill.
- Ed. 247. Seminar in Science Education (2).
- Ed. 248. Seminar in Vocational Education (2). Hornbake.
- Ed. 250. Analysis of the Individual (2). Second semester. Sievers.
- Ed. 261. Counseling Techniques (2). Sievers.
- Ed. 262. Occupational Information (2). Second semester. Sievers.

- Ed. 263, 264. Aptitudes and Aptitude Testing (2, 2). Offered in Baltimore.
- Ed. 268. Seminar in Educational Sociology (2). Schindler.
- Ed. 269. Seminar in Guidance (2). Sievers.
- Ed. 278. Seminar in Special Education (2).
- Ed. 279. Seminar in Adult Education (2). Wiggin.
- Ed. 280. Research Methods and Materials in Education (2).
- Ed. 281. Source Materials in Education (2).
- Ed. 289. Research (1-6). First and second semesters.

B. Business Education

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- B. Ed. 100. Techniques of Teaching Office Skills (2). Patrick.
- B. Ed. 101. Methods and Materials in Teaching Office Skills (2).
- B. Ed. 102. Methods and Materials in Teaching Bookkeeping and Related Subjects (2).
- B. Ed. 103. Basic Business Subjects in the Junior High School (2).
- B. Ed. 104. Basic Business Education in the Secondary Schools (2).

FOR GRADUATES

- B. Ed. 200. Administration and Supervision of Business Education (2).
- B. Ed. 255. Principles and Problems of Business Education (2). Patrick.

C. Home Economics Education

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- H. E. Ed. 102. Problems in Teaching Home Economics (3). First semester.
- H. E. Ed. 140 Curriculum, Instruction, and Observation (3) Second semester.

FOR GRADUATES

- H. E. Ed. 200. Seminar in Home Economics Education (2).
- H. E. Ed. 202. Trends in the Teaching and Supervision of Home Economics (2-4)

D. Human Development Education

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- H. D. Ed. 100, 101. Principles of Human Development I and II (2, 2). Prescott and Staff.

- H. E. Ed. 102, 103, 104. Child Development Laboratory I, II, and III (2, 2, 2). Prescott and Staff.
- H. D. Ed. 112. Scientific Concepts in Human Development (3). Prescott and Staff.
- H. D. Ed. 113. Laboratory in Behavior Analysis (3). Prescott and Staff.

FOR GRADUATES

- H. D. Ed. 200. Organic Processes and Factors in Human Development (2). First semester. Prescott and Staff.
- H. D. Ed. 201. Affectional Relationships and Processes in Human Development (2). Second semester. Prescott and Staff.
- H. D. Ed. 202. Socialization Processes in Human Development (2). Prescott and Staff.
- H. D. Ed. 203. Peer-culture and Group Processes in Human Development (2). Prescott and Staff.
- H. D. Ed. 210. "Self"-developmental Processes in Human Behavior (2). Prescott and Staff.
- H. D. Ed. 211. "Self"-adjustment Processes in Human Development (2). Prescott and Staff.
- H. D. Ed. 212. Advanced Scientific Concepts in Human Development (3). Prescott and Staff.
- H. D. Ed. 213. Advanced Laboratory in Behavior Analysis (3). Prescott and Staff.
- H. D. Ed. 220, 221. Educational Implications of Human Development Research (2, 2). Prescott and Staff.
- H. D. Ed. 230, 231. Field Program in Child Study I and II (2, 2). Prescott and Staff.

E. Industrial Education

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Ind. Ed. 105. General Shop (2). Second semester.
- Ind. Ed. 140. Curriculum, Instruction, and Observation (3). First semester. Hornbake.
- Ind. Ed. 150. Training Aids Development (2). Second semester. Wall.
- Ind. Ed. 164. Shop Organization and Management (2) Second semester. Wall.
- Ind. Ed. 165. Modern Industry (2). Summer session
- Ind. Ed. 166. Educational Foundations of Industrial Arts (2). First semester. Brown and Hornbake.

- Ind. Ed. 167. Problems in Occupational Education (2). Offered in Baltimore.
- Ind. Ed. 168. Trade or Occupational Analysis (2). First semester.
- Ind. Ed. 169. Construction of Vocational and Occupational Courses of Study (2).
- Ind. Ed. 170. Principles and Practices of Vocational Education (2). Summer session.
- Ind. Ed. 171. History of Vocational Education (2). Summer session.

FOR GRADUATES

- Ind. Ed. 207. Philosophy of Industrial Arts Education (2). First semester. Hornbake.
- Ind. Ed. 214. School Shop Planning and Equipment Selection (2). Second semester. Hornbake.
- Ind. Ed. 216. Supervision of Industrial Arts (2). Second semester. Hornbake.
- Ind. Ed. 220. Organization, Administration, and Supervision of Vocational Education (2).
- Ind. Ed. 240. Research in Industrial Arts and Vocational Education (2). First and second semesters. Staff.
- Ind. Ed. 241. Content and Method of Industrial Arts (2). Second semester. Hornbake.
- Ind. Ed. 248. Seminar in Industrial Arts and Vocational Education (2).

F. Nursery School-Kindergarten Education

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- C. Ed. 100. Child Development I—Infancy (3). First semester. McNaughton.
- C. Ed. 101. Child Development II—Early Childhood (3). Second semester. McNaughton.
- C. Ed. 102. Child Development III—The Child from 5 to 10 (2). First and second semesters.
- C. Ed. 110. Child Development IV (3). First and second semesters. Laboratory fee, \$1.00.
- C. Ed. 112. Play and Play Materials (2). Flannery.
- C. Ed. 113. Education of the Young Child I (2). McNaughton.
- C. Ed. 114. Education of the Young Child II—The Social and Emotional Needs of the Young Child (2). McNaughton.

- C. Ed. 115. Children's Activities and Activities Materials (3). Second semester.
- C. Ed. 116, 117. Creative Expressions; Art, Music, Dance (2-3, 2-3).
- C. Ed. 119. Curriculum, Instruction, and Observation—Cooperative Nursery School (2-3).
- C. Ed. 140. Curriculum, Instruction, and Observation—Nursery School (3). First and second semesters. Whitney.
- C. Ed. 145. Guidance in Behavior Problems (2). First semester. Whitney.
- C. Ed. 150. Curriculum, Instruction, and Observation—Kindergarten (2-3). Second semester.
- C. Ed. 160. Speech Problems in Child Development (2).
- C. Ed. 161. Behavior Problems of Childhood and Adolescence (2).
- C. Ed. 165. Leadership Training (2).

G. Nursing Education

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- N. Ed. 112. School of Nursing Finance and Administration (3). Offered in Baltimore.
- N. Ed. 115, 116. Ward Management and Clinical Teaching (2, 2). Offered in Baltimore.
- N. Ed. 190. Principles of Pediatric Nursing (3). Offered in Baltimore.

ENGINEERING

A. Aeronautical Engineering

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Aero. E. 101, 102. Aerodynamics (3, 2). Two lectures and one laboratory period a week, first and second semesters. Prerequisites, Math. 20, 21; Phys. 20, 21.
- Aero. E. 103. Airplane Detail Drafting (1). One laboratory period a week, first semester. Prerequisite, Dr. 1, 2, 3.
- Aero. E. 104. Airplane Layout Drafting (1). Two laboratory periods a week, second semester. Prerequisite, Aero. E. 103.
- Aero. E. 105, 106. Airplane Fabrication Shop (1, 2). One laboratory period a week, first and second semesters. Prerequisite, Shop 3.
- Aero. E. 107, 108. Airplane Design (4, 4). Two lectures and two laboratory periods a week, first and second semesters. Prerequisites, Mech. 50; Aero. E. 102, 104.

- Aero. E. 109, 110. Aircraft Power Plants (4, 4).** Three lectures and one laboratory period a week, first and second semesters. Prerequisites, Mech. 50; M. E. 100, 101.
- Aero. E. 111, 112. Aeronautical Laboratory (2, 2).** One lecture and one laboratory period a week, first and second semesters.
- Aero. E. 113, 114. Mechanics of Aircraft Structures (3, 3).** Three hours a week. Prerequisites, Mech. 50 and Math. 64.

FOR GRADUATES

- Aero. E. 200, 201. Advanced Aerodynamics (3, 3).** Two lectures and one laboratory period a week, first and second semesters. Prerequisites, Aero. E. 101, 102; Math. 64.
- Aero. E. 202, 203. Advanced Aircraft Structures (3, 3).** Two lectures and one laboratory period a week, first and second semesters. Prerequisites, Aero. E. 115, 116.
- Aero. E. 204, 205. Aircraft Dynamics (3, 3).** Two lectures and one laboratory period a week, first and second semesters. Prerequisites, Mech. 50; Math. 64.
- Aero. E. 206, 207. Advanced Aircraft Power Plants (3, 3).** Two lectures and one laboratory period a week, first and second semesters. Prerequisites, M. E. 100, 101; Aero. E. 109, 110.
- Aero. E. 208, 209. Advanced Aircraft Design and Construction (3, 3).** One lecture and two laboratory periods a week, first and second semesters. Prerequisites, Aero. E. 107, 108; Math. 64.
- Aero. E. 210. Aerodynamic Theory (3).** Three lectures a week. A study of the application of hydrodynamic theory to engineering problems. Circulation theory of lift, induced effects, velocity potential and stream function, conformal transformation.
- Aero. E. 211. The Design and Use of Wind Tunnels (Supersonic) (3).** Three lectures a week. Application of aerodynamic theory to nozzle design and power computation for supersonic tunnels; design of dryers, balances and optical equipment.
- Aero. E. 212. Bodies at Supersonic Speeds (3).** Three lectures a week. Brief review of gas dynamics, drag, lift, stability, and damping on a body in a supersonic stream. Special aerodynamics problems in the design of supersonic missiles. Methods for obtaining accurate test data on the aerodynamic characteristics of supersonic missiles.

B. Chemical Engineering

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Ch. E. 103 f.s. Elements of Chemical Engineering (3, 3).** Three hours a week, both semesters. Prerequisites, Chem. 1, 3; Phys. 20, 21. Huff.

- *Ch. E. 104. Chemical Engineering Seminar (1). One hour a week, both semesters, Prerequisite, permission of department. Bonney.
- Ch. E. 105 f.s. Advanced Unit Operations (5, 5). Two lectures and one all-day laboratory a week, both semesters. Prerequisites, Ch. E. 103 f,s; Chem. 187, 188, 189, 190. Laboratory fee, \$8.00 per semester. Bonney.
- Ch. E. 106 f.s. Minor Problems (6, 6). Six hours a week, both semesters. Prerequisites, Ch. E. 105 or simultaneous registration therein. (Not offered 1949-1950.) Huff, Bonney and Staff.
- Ch. E. 107. Fuels and Their Utilization (3). Three hours a week, second semester. Prerequisite, Ch. E. 103 f,s, or permission of the department. Huff.
- Ch. E. 108 f.s. Chemical Technology (2, 2). Two hours a week, both semesters. Prerequisite, Ch. E. 103, or simultaneous registration therein or permission of the department. Bonney.
- Ch. E. 109 f.s. Chemical Engineering Thermodynamics (2, 2). Two hours a week, both semesters. Prerequisites, Ch. E. 103, f,s; Chem. 187, 188, 189, 190, or permission of the department. Bonney.
- Ch. E. 110. Advanced Chemical Engineering Calculations (3). Three hours a week, first semester. Prerequisites, Math. 20, 21; Ch. E. 103 f.s. Bilbrey.
- Ch. E. 114. Applications of Electrochemistry (4). First semester. Three lecture hours and three laboratory hours a week. Prerequisite, consent of instructor. Laboratory fee, \$8.00. Smatko.
- Ch. E. 160, 161. Metallurgical Technology (2, 2). First and second semesters. Two hours a week. Prerequisites, Ch. E. 60, 61 and Ch. E. 103 f,s, or permission of the instructor Gottschalk.
- Ch. E. 180, 181. Unit Operations in Metallurgy (5, 5). First and second semesters. Two lectures and one all-day laboratory period a week. Prerequisites, Ch. E. 103 f,s; Ch. E. 21; Chem. 187, 188, 189, 190, or permission of the instructor. Laboratory fee, \$8.00 per semester. Gottschalk.

FOR GRADUATES

- Ch. E. 201 f.s. Graduate Unit Operations and Processes (5, 5 or more). One hour conference, three or more three-hour laboratory periods a week, both semesters. Prerequisite, permission of the department. Laboratory fee, \$8.00 per semester. Bonney.
- Ch. E. 202, f.s. Gas Analysis. (3). One lecture and two three-hour laboratory periods a week, one semester, to be arranged. Prerequisite, permission of the department. Laboratory fee, \$8.00 per semester. Bonney.

* The contents of this course are constantly changing so a student may receive a number of credits by re-registering.

- Ch. E. 203. Graduate Seminar (1).** One hour a week, each semester. The content of this work is constantly changing, so a student may receive a number of credits by re-registering. Prerequisite, permission of the department. Bonney.
- Ch. E. 205. Research and Chemical Engineering.** Prerequisites and credits to be arranged for individuals. Laboratory fee, \$8.00 per semester. Huff, Bonney.
- Ch. E. 207 f,s. Plant Design Studies (3, 3).** Three hours a week, both semesters. Prerequisite, permission of the department. Huff.
- Ch. E. 209 f,s. Plant Design Studies Laboratory (3, 3).** Three laboratory periods a week, both semesters. Prerequisite, permission of the department. Laboratory fee, \$8.00 per semester. Bonney.
- Ch. E. 210 f,s. Gaseous Fuels (2, 2).** Two hours a week, both semesters. Prerequisite, permission of the department. Huff.
- Ch. E. 214. Corrosion and Metal Protection (4).** Second semester. Four lecture hours a week. Prerequisites, Ch. E. 114 or Chem. 187, 189 or Chem. 188, 190, or consent of the instructor. Smatko.

C. Civil Engineering

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- C. E. 100. Theory of Structures (4).** Three lectures and one laboratory period a week, second semester. Prerequisite, Mech. 50.
- C. E. 101. Soil Mechanics (3).** Two lectures and one laboratory period a week, second semester. Prerequisites, Mech. 50 and Mech. 53.
- C. E. 102. Structural Design (6).** Four lectures and two laboratory periods a week, first semester. Prerequisite, C. E. 100.
- C. E. 103. Concrete Design (6).** Four lectures and two laboratory periods a week, second semester.
- C. E. 104. Water Supply (3).** Two lectures and one laboratory period a week, first semester. Prerequisite, C. E. 50.
- C. E. 105. Sewerage (3).** Two lectures and one laboratory period a week, second semester. Prerequisite, C. E. 50.
- C. E. 106. Elements of Highways (3).** Two lectures and one laboratory period a week, first semester. Prerequisite, C. E. 101.

FOR GRADUATES

- C. E. 200. Advanced Properties of Materials (3).** First or second semester. Prerequisite, Mech. 52 or equivalent.
- C. E. 201. Advanced Strength of Materials (3).** First or second semester. Prerequisites, Mech. 50, 51 or equivalent.

- C. E. 202. Applied Elasticity (3). First or second semester. Prerequisite, Math. 64 or equivalent.
- C. E. 203. Soils Mechanics (3). First or second semester. Prerequisite, C. E. 106 or equivalent.
- C. E. 204. Advanced Foundations (3). First or second semester. Prerequisites, C. E. 102, 103, 106 or equivalent.
- C. E. 205. Highway Engineering (3). First or second semester. Prerequisite, C. E. 101 or equivalent.
- C. E. 206. Theory of Concrete Mixtures (3). First and second semester. Prerequisite, Mech. 52 or equivalent.
- C. E. 207. Advanced Structures (4). Three lectures and one laboratory period a week. Prerequisites, C. E. 102, 103.
- C. E. 208. Advanced Sanitation (3). First or second semester. Prerequisite, graduate standing in civil engineering.
- C. E. 209. Advanced Water Supply (3). First or second semester. Prerequisite, C. E. 104 or equivalent.
- C. E. 210. Advanced Sewerage (3). First or second semester. Prerequisite, C. E. 105 or equivalent.
- C. E. 211. Sanitary Engineering Design (3). First or second semester. Prerequisites, C. E. 104, C. E. 105 or equivalent.
- C. E. 212. Research. Credit in accordance with work done. First and second semesters.
- C. E. 213. Seminar. Credit in accordance with work outlined by the civil engineering staff. Prerequisite, graduate standing in civil engineering.

D. Electrical Engineering

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- E. E. 100. Alternating-Current Circuits (6). Five lectures and one laboratory period a week, first semester. Prerequisites, Math. 21, Phys. 21 and E. E. 1.
- E. E. 101. Engineering Electronics (6). Five lectures and one laboratory period a week, second semester. Prerequisite, E. E. 100.
- E. E. 102, 103. Alternating-Current Machinery (4, 4). Three lectures and one laboratory period a week, first and second semesters. Prerequisites, E. E. 65 and E. E. 100.
- E. E. 104. Communication Circuits (3). Three lectures a week, second semester. Prerequisites, E. E. 60 and E. E. 100.
- E. E. 105, 106 Radio Engineering (4, 4). Three lectures and one laboratory period a week, first and second semesters. Prerequisite, E. E. 101.

- E. E. 108. Electric Transients (3).** Three lectures a week, first semester. Prerequisite, E. E. 101.
- E. E. 109. Principles of Radar (3).** Three lectures a week, second semester. Prerequisite, E. E. 105.
- E. E. 114. Applied Electronics (3).** Three lectures a week (including demonstration lectures), first semester. Prerequisite, E. E. 101.
- E. E. 116. Alternating-Current Machinery Design (3).** Two lectures and one calculation period a week, second semester. Prerequisite, concurrent registration in E. E. 103.
- E. E. 117. Power Transmission and Distribution (3).** Three lectures a week, first semester. Prerequisite, concurrent registration in E. E. 102.
- E. E. 120. Electromagnetic Waves (3).** Three lectures a week, first semester. Prerequisites, senior standing in electrical engineering or physics and B average in mathematics.
- E. E. 160, 161. Vacuum Tubes (3, 3).** Three lectures a week, first and second semesters. Prerequisites, senior standing in electrical engineering or physics and B average in mathematics.

FOR GRADUATES

- E. E. 200. Symmetrical Components (3).** Three lectures a week, first semester. Prerequisite, E. E. 103. (Not offered in 1949-1950.)
- E. E. 201. Electromagnetic Theory (3).** Three lectures a week, second semester. Prerequisite, E. E. 120.
- E. E. 202, 203. Transients in Linear Systems (3, 3).** Three lectures a week, first and second semesters. Prerequisite, undergraduate major in electrical or mechanical engineering or physics.
- E. E. 204, 205. Advanced Circuit Analysis (3, 3).** Three lectures a week, first and second semesters. Prerequisite, undergraduate major in electrical engineering or physics. (Not offered in 1949-1950.)
- E. E. 206, 207. Ultra-High-Frequency Techniques (3, 3).** Three lectures a week, first semester; two lectures and one laboratory period a week, second semester. Prerequisite, E. E. 201.
- E. E. 209. Stability in Power Systems (3).** Three lectures a week, second semester. Prerequisite, E. E. 200. (Not offered in 1949-1950.)
- E. E. 210, 211. Advanced Radio Engineering (3, 3).** Three lectures a week, first and second semesters. Prerequisite, E. E. 106. (Not offered in 1949-1950.)
- E. E. 212, 213. Automatic Regulation (3, 3).** Three lectures a week, first and second semesters. Prerequisite, undergraduate major in electrical or mechanical engineering or physics.

- E. E. 215, 216. **Radio Wave Propagation (3, 3)**. Three lectures a week, first and second semesters. Prerequisite, E. E. 120.
- E. E. 222 **Graduate Seminar (1)**. First semester. Prerequisite, approved application for candidacy to the degree of Master of Science or Doctor of Philosophy in electrical engineering.
- E. E. 232. **Active Network Analysis (3)**. Three lectures a week, first semester. Prerequisite, E. E. 202 or E. E. 204.
- E. E. 233. **Network Synthesis (3)**. Three lectures a week, second semester. Prerequisite, E. E. 232.
- E. E. 235. **Applications of Tensor Analysis (3)**. Three lectures a week, second semester. Prerequisite, E. E. 202. (Not offered in 1949-1950.)
- E. E. 250 **Electrical Engineering Research**. Prerequisite, approved application for candidacy to the degree of Master of Science or Doctor of Philosophy in electrical engineering. Six semester hours are required of M.S. degree candidates and a minimum of 12 semester hours are required of Ph.D. candidates.

E. Mechanical Engineering

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- M. E. 100. **Thermodynamics (3)**. Two lectures and one laboratory period a week, first and second semesters. Prerequisites, Math. 20, 21; Phys. 20, 21.
- M. E. 101. **Heat Transfer (2)**. First semester. Two lectures a week. Prerequisites, M. E. 54 and M. E. 100.
- M. E. 102. **Heating and Air Conditioning (3)**. First semester. Two lectures and one laboratory period a week. Prerequisites, M. E. 100, 101.
- M. E. 103. **Refrigeration (3)**. Second semester. Two lectures and one laboratory period a week. Prerequisites, M. E. 100, 101.
- M. E. 104, 105. **Prime Movers (4, 4)**. Two lectures and two laboratory periods a week, first and second semesters. Prerequisites, Mech. 101; M. E. 50, 51.
- M. E. 106, 107. **Mechanical Engineering Design (4, 4)**. Two lectures and two laboratory periods a week, first and second semesters. Prerequisites, Mech. 50; M. E. 100, 101.
- M. E. 108, 109. **Mechanical Laboratory (2, 2)**. One lecture and one laboratory period a week, first and second semesters.

FOR GRADUATES

- M. E. 200, 201. **Advanced Dynamics (3, 3)**. Three hours a week, first and second semesters. Prerequisites, Mech. 2, 50; Math. 64; M. E. 106, 107; M. E. 108, 109.

- M. E. 202, 203. Applied Elasticity (3, 3). Three hours a week, first and second semesters. Prerequisites, Mech. 2, 50; Math. 64; M. E. 106, 107.
- M. E. 204, 205. Advanced Thermodynamics and Heat Transfer (3, 3). Three hours a week, first and second semesters. Prerequisites, M. E. 100, 101; M. E. 108, 109; Math. 64.
- M. E. 206, 207. Advanced Machine Design (3, 3). One lecture and two laboratory periods a week, first and second semesters. Prerequisites, M. E. 106, 107.
- M. E. 208, 209. Steam Power Plant Design (3, 3). One lecture and two laboratory periods a week, first and second semesters. Prerequisites, M. E. 108, 109.
- M. E. 210, 211. Advanced Fluid Mechanics (3, 3). Three hours a week, first and second semesters. Prerequisites, M. E. 54; Math. 64.
- M. E. 212, 213. Advanced Steam Power Laboratory (2, 2). One lecture and one laboratory period a week, first and second semesters. Prerequisite, concurrent registration in M. E. 204, 205.
- M. E. 214, 215. Advanced Applied Mechanics Laboratory (2, 2). One lecture and one laboratory period a week, first and second semesters. Prerequisite, concurrent registration in M. E. 200, 201 and M. E. 202, 203.
- M. E. 216, 217. Advanced Internal Combustion Engine Design (3, 3). One lecture and two laboratory periods a week, first and second semesters. Prerequisites, M. E. 106, 107; M. E. 108, 109; and concurrent registration in M. E. 200, 201 and M. E. 204, 205.
- M. E. 218, 219. Advanced Internal Combustion Engine Laboratory (2, 2). One lecture and one laboratory period a week, first and second semesters. Prerequisite, concurrent registration in M. E. 216, 217.
- M. E. 220. Seminar. Credit in accordance with work outlined by Mechanical Engineering staff.
- M. E. 221. Research. Credit in accordance with work outlined by Mechanical Engineering staff.
- M. E. 222. Advanced Metallography (3). First or second semester. Two lectures and one laboratory period a week. Prerequisites, Mech. 50; M. E. 533.
- M. E. 223, 224. Steam and Gas Turbine Design (3, 3). First and second semesters. Prerequisites, M. E. 100, M. E. 101, M. E. 106-107, and Math. 64.
- M. E. 225, 226. Advanced Properties of Metals and Alloys (2, 2). First and second semesters. Two lectures per week. Prerequisites, Mech. 52; M. E. 53, M. E. 106, M. E. 107.

M. E. 227, 228. *Theory of Elasticity* (3, 3). First and second semesters. Three lectures per week. Prerequisites, Mech. 52; M. E. 53, M. E. 106, M. E. 107; Math. 64.

M. E. 229, 230, 231. *Jet Propulsion* (2, 2, 2). First and second semesters. Two lectures per week. Prerequisites, M. E. 101, M. E. 104, M. E. 105.

ENGLISH LANGUAGE AND LITERATURE

Special Departmental Requirements

MASTER OF ARTS

1. Candidates for the degree of Master of Arts in the Department of English must demonstrate a reading knowledge of a foreign language at the time of admission, or not later than three months before taking the degree. Choice of French or German is recommended.

2. A final written examination will be based in part upon the courses pursued and in part upon general familiarity with English and American literature. The examination will test the candidate's powers of analysis and criticism.

DOCTOR OF PHILOSOPHY

1. Candidates for the degree of Doctor of Philosophy in the Department of English must demonstrate a reading knowledge of German and one other approved modern foreign language.

2. Candidates must pass a comprehensive written examination at least three months before they expect to be awarded degrees. This examination will include linguistics (morphology and phonology) and each of the major literary fields.

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Eng. 101. <i>History of the English Language</i> (3). Second semester.	Harman.
Eng. 102. <i>Old English</i> (3). First semester.	Ball.
Eng. 103. <i>Beowulf</i> (3). Second semester.	Ball.
Eng. 104. <i>Chaucer</i> (3). First semester.	Harman.
Eng. 106. <i>English and Scottish Ballads</i> (3). Second semester.	Cooley.
Eng. 110, 111. <i>Elizabethan and Jacobean Drama</i> (3, 3). Three hours a week, first and second semesters. (Not offered in 1949-1950.)	Zeeveld.
Eng. 112. <i>Poetry of the Renaissance</i> (3). First semester.	Zeeveld.
Eng. 113. <i>Prose of the Renaissance</i> (3). Second semester.	Zeeveld.
Eng. 115, 116. <i>Shakespeare</i> (3, 3). Three hours a week, first and second semesters.	Zeeveld.

- Eng. 120. English Drama from 1660 to 1800 (3). Second semester.
Weber.
- Eng. 121. Milton (3). Second semester. Murphy.
- Eng. 122. Literature of the Seventeenth Century, 1600-1660 (3). First semester. Murphy.
- Eng. 123. Literature of the Seventeenth Century, 1660-1700 (3). Second semester. (Not offered in 1949-1950.) Aldridge.
- Eng. 125, 126. Literature of the Eighteenth Century (3, 3). First and second semesters. Aldridge.
- Eng. 129, 130. Literature of the Romantic Period (3, 3). Three hours a week, first and second semesters. Weber.
- Eng. 134, 135. Literature of the Victorian Period (3, 3). Three hours a week, first and second semesters. Cooley, Mooney.
- Eng. 139, 140. The English Novel (3, 3). Three hours a week, first and second semesters. Aldridge, Mooney.
- Eng. 143. Modern Poetry (3). First semester. Murphy.
- Eng. 144. Modern Drama (3). First semester. Weber.
- Eng. 145. The Modern Novel (3). Second semester. Manning.
- Eng. 148. The Literature of American Democracy (3). First semester.
Bode.
- Eng. 150, 151. American Literature to 1900 (3, 3). Three hours a week, first and second semesters. Gravely, Manning.
- Eng. 155, 156. Four Major American Writers (3, 3). Three hours a week throughout the year. Bode, Manning.
- Eng. 170. Creative Writing (2). First semester. Prerequisite, permission of the instructor. R. Fleming
- Eng. 171. Advanced Creative Writing (2). Second semester. Prerequisite, permission of the instructor. R. Fleming.
- Eng. 172. Playwriting (2). Second semester. Prerequisite, permission of the instructor. R. Fleming.

FOR GRADUATES

- Eng. 200. Research (3-6). Arranged.
- Eng. 201. Bibliography and Methods (3). First semester. Mooney.
- Eng. 202. Middle English (3). First semester. Harman.
- Eng. 203. Gothic (3). Second semester. (Not offered in 1949-1950.)
Harman.
- Eng. 204. Medieval Romances (3). First semester. (Not offered in 1949-1950.)
Cooley.

- Eng. 206, 207. Seminar in Renaissance Literature (3, 3). First and second semesters. McManaway.
- Eng. 210. Seminar in Seventeenth Century Literature (3). Second semester. Murphy.
- Eng. 212, 213. Seminar in Eighteenth Century Literature (3, 3). First and second semesters. Aldridge.
- Eng. 214, 215. Seminar in Nineteenth Century Literature (3, 3). First and second semesters. Cooley, Mooney, Weber.
- Eng. 216, 217. Literary Criticism (3, 3). Three hours a week, first and second semesters. (Not offered in 1949-1950.) Cardwell.
- Eng. 225, 226. Seminar in American Literature (3, 3).. Three hours a week, first and second semesters. Bode.
- Eng. 227, 228. Problems in American Literature (3, 3). Cardwell.
- Eng. 230. Studies in American Language (3). (Not offered in 1949-1950.)
- Eng. 257. Problems in Folklore (3). Second semester. (Not offered in 1949-1950.)

ENTOMOLOGY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Ent. 100. Advanced Apiculture (3). Second semester. One lecture and two three-hour laboratory periods a week. Prerequisite, Ent. 4. Laboratory fee, \$3.00. Abrams.
- Ent. 101. Economic Entomology (3). (Not offered in 1949-1950.) Cory.
- Ent. 103, 104. Insect Pests (3, 3). Two lectures and one three-hour laboratory period a week, first and second semesters. Prerequisite, Ent. 1 or consent of the department. Laboratory fee, \$3.00. Cory.
- Ent. 105. Medical Entomology (3). Two lectures and one three-hour laboratory period a week, first semester. Prerequisite, Ent. 1 or consent of the department. Laboratory fee, \$3.00. Vogt.
- Ent. 106. Advanced Insect Taxonomy (3). First semester. Two three-hour laboratory periods a week. Prerequisite, Ent. 3. Laboratory fee, \$3.00. Vogt.
- Ent. 107. Insecticides (2). Second semester. Prerequisites, Ent. 1 and elementary Organic Chemistry. Shepard.
- Ent. 109. Insect Physiology (2). Two lectures and occasional demonstrations, second semester. Prerequisite, consent of the department. Munson.
- Ent. 110, 111. Special Problems (1, 1). First and second semesters. Prerequisites, to be determined by the department. Cory.
- Ent. 112. Seminar (1). First and second semesters. Cory.

- Ent. 114. Insect Pests of Greenhouses (3).** Second semester. Two lectures and one three-hour laboratory period a week. Prerequisite, Ent. 1 or consent of the department. Laboratory fee, \$3.00. Haviland.

FOR GRADUATES

- Ent. 201. Advanced Entomology.** Credit and prerequisites to be determined by the department. First and second semesters. Cory.
- Ent. 202. Research.** Cory.
- Ent. 203. Advanced Insect Morphology (2-4).** Two lectures a week; additional laboratory work and credit by special arrangement with the department. First semester. Snodgrass.
- Ent. 205. Insect Ecology (2).** One lecture and one three-hour laboratory period a week, second semester. Prerequisite, consent of the department. Vogt.

FOREIGN LANGUAGES AND LITERATURE

A. French

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- French 100. French Literature of the Sixteenth Century (3).** First semester.
- French 101, 102. French Literature of the Seventeenth Century (3, 3).** Three hours a week, first and second semesters.
- French 103, 104. French Literature of the Eighteenth Century (3, 3).** Three hours a week, first and second semesters. Falls.
- French 105, 106. French Literature of the Nineteenth Century (3, 3).** Three hours a week, first and second semesters.
- French 121, 122. Advanced Composition (3, 3).** Three hours a week, first and second semesters. Falls.
- French 161, 162. French Life and Culture (3, 3).** Three hours a week, first and second semesters. Falls.

FOR GRADUATES

The requirements of students will determine which courses will be offered.

- French 201. Research.** Credits determined by work accomplished.
- French 203, 204. George Duhamel, Poet, Dramatist, Novelist (2, 2).** Two hours a week, first and second semesters. Falls.
- French 205, 206. French Literature of the Middle Ages (2, 2).** Two hours a week, first and second semesters.
- French 207, 208. The French Novel in the First Half of the Nineteenth Century (2, 2).** Two hours a week, first and second semesters. Falls.

- French 209, 210. The French Novel in the Second Half of the Nineteenth Century (2, 2). Two hours a week, first and second semesters. Falls.
- French 211. Introduction to Old French (3). Second semester.
- French 213, 214. Seminar (2, 2). Two hours a week, first and second semesters. Required of all graduate majors in French.
- French 215, 216. Moliere (2, 2). First and second semesters. Quynn.
- French 221, 222. Reading Course (2, 2). One conference a week, first and second semesters.

B. German

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- German 101, 102. German Literature of the Eighteenth Century (3, 3). Three hours a week, first and second semesters. PrahL.
- German 103, 104. German Literature of the Nineteenth Century (3, 3). Three hours a week, first and second semesters. PrahL.
- German 105, 106. Contemporary German Literature (3, 3). Three hours a week, first and second semesters. PrahL.
- German 107, 108. Goethe's Faust (2, 2). Two hours a week, first and second semesters. Zucker.
- Attention is called to Comp. Lit. 106, Romanticism in Germany, and Comp. Lit. 107, The Faust Legend in English and German Literature.
- German 121, 122. Advanced Composition (3, 3). Three hours a week, first and second semesters. Prerequisites, German 71, 80, or consent of instructor.
- German 161, 162. German Life and Culture (3, 3). Three hours a week, first and second semesters. Cunz.

FOR GRADUATES

The requirements of students will determine which courses will be offered.

- German 201. Research. Credits determined by work accomplished.
- German 202, 203. The Modern German Drama (3, 3). Three hours a week, first and second semesters. Zucker.
- German 204. Schiller (3). PrahL.
- German 205. Goethe's Works Outside of Faust (2). Second semester. Zucker.
- German 206. The Romantic Movement (3). PrahL.
- German 208. The Philosophy of Goethe's Faust (3). First semester. Zucker.

- German 210. Seminar (3). Three hours a week, first and second semesters. Required of all graduate majors in German.
- German 220, 221. Reading Course (2, 2). One conference a week, first and second semesters.
- German 230. Introduction to European Linguistics (3).
- German 231. Middle High German (3).

C. Spanish

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Spanish 101. Epic and Ballad (3). First semester.
- Spanish 104. The Drama of the Golden Age (3). First semester.
- Spanish 105. The Spanish Novel of the Golden Age (3). Second semester.
- Spanish 106. The Poetry of the Golden Age (3). First semester.
- Spanish 107. The Spanish Mystics (3). Second semester.
- Spanish 108. Lope de Vega (3). First semester.
- Spanish 109. Cervantes (3). Second semester.
- Spanish 110. The Poetry of the Nineteenth Century (3). First semester.
- Spanish 111. The Novel of the Nineteenth Century (3). Second semester.
- Spanish 112. The Drama of the Nineteenth Century (3). Second semester.
- Spanish 113. The Novel of the Twentieth Century (3). First semester.
- Spanish 114. The Poetry of the Twentieth Century (3). First semester.
- Spanish 115. Spanish Thought in the Twentieth Century (3). First semester.
- Spanish 116. The Drama of the Twentieth Century (3). Second semester.
- Spanish 121, 122. Advanced Composition (3, 3). Three hours a week, first and second semesters.
- Spanish 151. Latin-American Novel (3). First semester.
- Spanish 152. Latin-American Poetry (3). Second semester.
- Spanish 153. Latin-American Essay (3). First semester.
- Spanish 161, 162. Spanish Life and Culture (3, 3). Three hours a week, first and second semesters.
- Spanish 163, 164. Latin-American Civilization (3, 3). Three hours a week, first and second semesters.

FOR GRADUATES

- Spanish 201. Research. Credits determined by work accomplished.

- Spanish 202. The Golden Age in Spanish Literature (3). First semester.
- Spanish 203, 204. Spanish Poetry (3, 3). Three hours a week, first and second semesters.
- Spanish 210. Seminar. Arranged.
- Spanish 213. Introduction to Old Spanish (3). Second semester.
- Spanish 221, 222. Reading Course. Arranged.

HISTORY

Special Departmental Requirements

Eight to ten hours of the total major course requirements of all candidates for this degree must be acquired in the general field of thesis, i. e., either American or European history .

DOCTOR OF PHILOSOPHY

1. At least thirty hours of the total major course requirements must be acquired in the general field of the thesis, i. e., American history or European history.
2. At least ten hours of the thirty required for a minor in history must be taken at the University of Maryland.
3. Prospective candidates must pass preliminary written and oral examinations covering various fields of their major and minor subjects before admission to candidacy. Consult the head of the department for details.

FOR GRADUATES AND ADVANCED UNDERGRADUATES

A. American History

- H. 5, 6 or H. 3, 4, are prerequisites for courses H. 101 to H. 142, inclusive.
- H. 101. American Colonial History (3). First semester. Ferguson.
- H. 102. The American Revolution (3). Second semester. Ferguson.
- H. 105, 106. Social and Economic History of the United States to 1860 (3, 3). Three hours a week, first and second semesters. (Not offered in 1949-1950.) Chatelain.
- H. 107. Social and Economic History of the United States, 1860-1900 (3). First semester. Chatelain.
- H. 108. Social and Economic History of the United States, Since 1900 (3). Second semester. Chatelain.
- H. 115. The Old South (3). First semester. Merrill.
- H. 116. The Civil War and Reconstruction (3). Second semester. Merrill.
- H. 118, 119. Recent American History (3, 3). First and second semesters. Merrill.

- H. 121, 122. **History of the American Frontier (3, 3).** Three hours a week, first and second semesters. Gewehr.
- H. 127, 128. **Diplomatic History of the United States (3, 3).** Three hours a week, first and second semesters. Wellborn.
- H. 129. **The United States and World Affairs (3).** First semester. Wellborn.
- H. 130. **Territorial Dependencies of the United States (3).** Wellborn.
- H. 133, 134. **The History of American Ideas (3, 3).** Three hours a week, first and second semesters. Johnson.
- H. 135, 136. **Constitutional History of the United States (3, 3).** Three hours a week, first and second semesters. Gewehr.
- H. 141, 142. **History of Maryland (3, 3).** Three hours a week, first and second semesters. (Not offered in 1949-1950.) Chatelain.
- H. 145, 146. **Latin-American History (3, 3).** Three hours a week, first and second semesters. Crosman.
- H. 147. **History of Mexico (3).** First semester. Crosman.

B. European History

- H. 151. **History of the Ancient Orient and Greece (3).** First semester. Jashemski.
- H. 153. **History of Rome (3).** Second semester. Jashemski.
- H. 155. **Medieval Civilization (3).** First semester. Prerequisites, H. 1, 2, or H. 3, 4. Jashemski.
- H. 161. **The Renaissance and Reformation (3).** Second semester. Prerequisites, H. 1, 2, or H. 3, 4. Jashemski.
- H. 166. **Revolutionary and Napoleonic Europe (3).** Second semester. Prerequisites, H. 1, 2, or H. 3, 4. Bauer.
- H. 171, 172. **Europe in the Nineteenth Century, 1815-1919 (3, 3).** Three hours a week, first and second semesters. Prerequisites, H. 1, 2, or H. 3, 4. Bauer.
- H. 175, 176. **Europe in the World Setting of the Twentieth Century (3, 3).** Three hours a week, first and second semesters. Prerequisites, H. 1, 2, or H. 3, 4. Prange.
- H. 179, 180. **Diplomatic History of Europe Since 1871 (3, 3).** Three hours a week, first and second semesters. Prerequisites, H. 1, 2, or H. 3, 4. Prange.
- H. 181, 182. **History of Central Europe (3, 3).** Three hours a week, first and second semesters. Prerequisites, H. 1, 2, or H. 3, 4. Prange.

- H. 185, 186. *History of the British Empire* (3, 3). Three hours a week, first and second semesters. Prerequisites, H. 1, 2, or H. 3, 4, or equivalent. Gordon.
- H. 187. *History of Canada* (3). First semester. Prerequisites, H. 1, 2, or H. 3, 4. Gordon.
- H. 191. *History of Russia* (3). First semester. Prerequisites, H. 1, 2, or H. 3, 4. Bauer.
- H. 192. *Foreign Policy of the USSR* (3). Second semester. Prerequisites, H. 1, 2 and H. 191. Bauer.
- H. 193. *History of the Near East* (3). First semester. Prerequisites, H. 1, 2, or equivalent. (Not offered in 1949-1950.) Gewehr.
- H. 195. *The Far East* (3). Second semester. (Not offered in 1949-1950.) Gewehr.
- H. 199. *Proseminar in Historical Writing* (3). Second semester. Staff.

FOR GRADUATES

- H. 200. *Research* (3-6). Credit apportioned to amount of research. First and second semesters. Staff.
- H. 201. *Seminar in American History* (3). First and second semesters. Chatelain.
- H. 205, 206. *Topics in American Economic and Social History* (3, 3). Arranged. First and second semesters. Chatelain.
- H. 208. *Topics in Recent American History* (3). First and second semesters. Merrill.
- H. 211. *The Colonial Period in American History* (3). Arranged. First semester. Ferguson.
- H. 212. *Period of the American Revolution* (3). Arranged. Second semester. Ferguson.
- H. 215. *The Old South* (3). Merrill.
- H. 216. *The American Civil War* (3). Merrill.
- H. 221, 222. *History of the West* (3, 3). Gewehr.
- H. 233, 234. *Topics in American Intellectual History* (3, 3). Johnson.
- H. 235. *Problems in American Constitutional History* (3). First and second semesters. Gewehr.
- H. 250. *Seminar in European History* (3). First and second semesters. Bauer.
- H. 255. *Medieval Culture and Society* (3). Jashemski.
- H. 281. *Topics in the History of Central Europe* (3). Prange.

- H. 285, 286. Topics in the History of Modern England and Great Britain (3, 3). Three hours a week, first and second semesters. Gordon.
- H. 287. Historiography (3). Sparks.

HOME ECONOMICS

A. Textiles and Clothing

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Laboratory fees in Textiles and Clothing for graduate students are \$3.00 per course per semester.

- Tex. 101. Problems in Textiles (3). One lecture and three laboratory periods a week, first semester. Prerequisites, Tex. 100; Organic Chemistry. Akin.
- Tex. 102. Textile Testing (3). Three laboratory periods a week, first semester. Prerequisite, Tex. 100.
- Tex. 103. Textile Microscopy (3). Three laboratory periods a week, second semester. Prerequisite, Tex. 101.
- Tex. 105. Consumer Problems in Textiles (3). Two lectures and one laboratory period a week, first and second semesters. Prerequisite, Tex. 1, or equivalent. Akin.
- Tex. 106. Household Textiles (3). Three laboratory periods a week, first semester. Prerequisite, Tex. 1.
- Tex. 108. Decorative Fabrics (2). One lecture and one laboratory period a week, first semester.
- Clo. 120. Draping (3). Three laboratory periods a week, first and second semesters. Prerequisite, Clo. 22. Wilbur.
- Clo. 121. Pattern Designs (2). Two laboratory periods a week, second semester. Prerequisite, Clo. 22. Wilbur.
- Clo. 122, 125. Tailoring (2, 2). Two laboratory periods a week. Prerequisite, Clo. 22. Mitchell.
- Clo. 123. Children's Clothing (2). One lecture and one laboratory period a week, first and second semesters. Prerequisite, Clo. 20A or 20B, or equivalent. Wilbur.
- Clo. 124. Projects and Readings in Textiles and Clothing (2). Second semester.
- Clo. 126. Fundamentals of Fashion (2-3). First semester. Prerequisite, senior standing.
- Clo. 127. Apparel Design (3). Second semester. Prerequisites, Clo. 120; senior standing. Wilbur.

Clo. 128. Home Furnishings (3). Three laboratory periods a week, second semester. Prerequisites, Tex. 1, Clo. 20A or B, or consent of instructor.

FOR GRADUATES

Tex. 200. Special Studies in Textiles (2-4).

Clo. 220. Special Studies in Clothing (2-4). First and second semesters. Mitchell.

Tex. and Clo. 230. Seminar (1). First and second semesters.

Tex. and Clo. 231. Research. First and second semesters.

Tex. and Clo. 232. Economics of Clothing and Textiles (3). Second semester.

B. Practical Art and Crafts

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Laboratory fees in Practical Arts for graduate students are \$3.00 per course per semester.

Pr. Art 100, 101. Mural Design (2, 2). Two laboratory periods a week, first semester. Prerequisites, Pr. Art 1, 2, 3, 21, and consent of the instructor. Cuneo.

Pr. Art 102, 103. Advanced Mural Design (2, 2). Two laboratory periods a week, first semester. Prerequisites, Pr. Art 1, 2, 3, 21, 100, 101. Cuneo.

Pr. Art 120, 121. Costume Illustration (2, 2). Two laboratory periods a week, first and second semesters. Prerequisites, Pr. Art 1, 20, 21, 22, and consent of instructor. Cassels.

Pr. Art 124, 125. Individual Problems in Costume (2, 2). Two laboratory periods a week, first and second semesters. Prerequisites, Pr. Art 1, 20, 120, 121, and consent of instructor. Cassels.

Pr. Art 132. Advertising Layout (2). Two laboratory periods a week, first and second semesters. Prerequisites, Pr. Art 1, 20, 21, 22, 30, and consent of instructor. Cuneo.

Pr. Art 134, 135. Individual Problems in Advertising (2, 2). Two laboratory periods a week, second semester. Prerequisite, Pr. Art 1, 20, 30, 120, 132, or equivalent, and consent of instructor. Cuneo.

Pr. Art 136. Merchandise Display (2). Two laboratory periods a week, first and second semesters. Prerequisites, Pr. Art 1, 20, 30; 120, 132 to precede or parallel. Cassels.

Pr. Art 137. Advanced Merchandise Display (2). Two laboratory periods a week, first and second semesters. Prerequisites, Pr. Art 1, 20, 30, 120, 132, 136, and consent of instructor. Cassels.

- Pr. Art 138, 139. **Advanced Photography (2, 2).** Three laboratory periods a week, first and second semesters. Prerequisites, Pr. Art 1, 38, 39.
Cuneo.
- Pr. Art 140, 141. **Interior Design (1, 3).** One laboratory period a week, first semester; three laboratory periods a week, second semester. Prerequisites, Pr. Art 1 and Pr. Art 2.
Brown.
- Pr. Art 142, 143. **Advanced Interior Design (2, 2).** Two laboratory periods a week, first and second semesters. Prerequisites, Pr. Art 1, 140, 141, or equivalent.
Brown.
- Pr. Art 144, 145. **Individual Problems in Interior Design (2, 2).** Two laboratory periods a week, first and second semesters. Prerequisites, Pr. Art 1, 140, 141, 142, 143, and consent of instructor.
Brown.
- Cr. 120, 121. **Advanced Ceramics (2, 2).** Three laboratory periods a week, first and second semesters. Prerequisites, Cr. 20, 21.
Lawson.
- Cr. 124, 125. **Individual Problems in Ceramics (2, 2).** Two laboratory periods a week, first and second semesters. Prerequisites, Cr. 20, 21, 120, 121, and consent of instructor.
Lawson.
- Cr. 130, 131. **Advanced Metalry (2, 2).** Three laboratory periods a week, first and second semesters. Prerequisites, Cr. 30, 31.
Lawson.
- Cr. 134, 135. **Individual Problems in Metalry (2, 2).** Three laboratory periods a week, first and second semesters. Prerequisites, Cr. 30, 31, 130, 131, and consent of instructor.
Lawson.
- Cr. 140, 141. **Advanced Weaving (2, 2).** Three laboratory periods a week, first and second semesters. Prerequisites, Cr. 40, 41.
Lawson.
- Cr. 144, 145. **Individual Problems in Weaving (2, 2).** Three laboratory periods a week, first and second semesters. Prerequisites, Cr. 40, 41, 140, 141, and consent of instructor.
Lawson.
- Cr. 198. **Crafts in Therapy (2).** Second semester. Prerequisites, three courses in various crafts or art construction and consent of instructor.
Curtiss.

C. Home and Institution Management

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Home Mgt. 150, 151. **Management of Home (3, 3).** Three hours a week, first and second semesters.
Crow and Burke.
- Home Mgt. 152. **Experience in Management of Home (3).** First and second semesters. Prerequisites, Home Mgt. 150, 151. Laboratory fee for graduate students, \$7.00.
Crow and Burke.
- Inst. Mgt. 160. **Institution Organization and Management (3).** Two lectures and one laboratory period a week, first semester. Prerequisites, Foods 2, 3; Nut. 110; Home Mgt. 150, 151.

- Inst. Mgt. 161. Institution Purchasing and Accounting (3).** Two lectures and one laboratory period a week, second semester. Prerequisite, Inst. Mgt. 160.
- Inst. Mgt. 162. Institution Foods (3).** One lecture and two laboratory periods a week, second semester. Prerequisites, Inst. Mgt. 160, 161.
- Inst. Mgt. 163. Practice in Institution Management (3).** Arranged. Three laboratory periods a week. Prerequisites, Inst. Mgt. 160, 161.
- Inst. Mgt. 164. Advanced Institution Management (2).** One lecture and one laboratory period a week, second semester. Prerequisites, Inst. Mgt. 160, 161, 162.
- Inst. Mgt. 165. School Lunch (3).** Two lectures and one laboratory period a week, second semester and summer session. Prerequisites, Foods 2, 3; Nut. 110, or equivalent.
- Inst. Mgt. 181. Purchasing and Accounting for Housekeeping Administration (3).** Second semester. Prerequisite, Inst. Mgt. 160.
- Inst. Mgt. 182. Housekeeping Management (3).** First semester. Prerequisite, Inst. Mgt. 160.
- Inst. Mgt. 183. Problems in Housekeeping Management (3).** Second semester. Prerequisites, Inst. Mgt. 160 and Inst. Mgt. 182.

D. Foods and Nutrition

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Laboratory fees in Foods, for graduate students, are \$7.00 per course per semester.

- Foods 100. Food Economics (2).** One lecture and one laboratory period a week, first and second semesters. Prerequisite, Foods 1 or 2, 3. LeGrand.
- Foods 101. Meal Service (2).** Two laboratory periods a week, first and second semesters. Prerequisite, Foods 1 or 2, 3. Cornell and Spencer.
- Foods 102. Experimental Foods (3).** One lecture and two laboratory periods a week, first semester. Prerequisites, Foods 2, 3; Organic Chemistry, Chem. 31, 32, 33, 34. Peers.
- Foods 103. Demonstrations (2).** Two laboratory periods a week, first and second semesters. Prerequisites, Clo. 20; Foods 1 or 2, 3; Pr. Art 20; Tex. 1. Neylan.
- Foods 104. Advanced Foods (2).** Two laboratory periods a week, second semester. Prerequisite, Foods 1 or 2, 3. Peers.
- Foods 105. Foods of Other Countries (3).** One lecture and two laboratory periods a week, second semester. Prerequisite, Foods 1 or 2, 3, or equivalent. Neylan.

- Nut. 110.** Nutrition (3). First semester. Prerequisites, Foods 2, 3; Organic Chemistry, Chem. 31, 32, 33, 34. LeGrand.
- Nut. 111.** Child Nutrition (2). One lecture and one laboratory period a week, second semester. Prerequisite, Foods 1 or 2, 3; Nut. 110 or 10. Spencer.
- Nut. 112.** Dietetics (3). One lecture and two laboratory periods a week, first semester. Prerequisite, Nut. 110. LeGrand.
- Nut. 113.** Diet in Disease (2). Two periods a week, first semester. Prerequisite, Nut. 110. Hagel.

FOR GRADUATES

- Foods 200.** Advanced Experimental Foods (3-5). Second semester.
- Nut. 210.** Readings in Nutrition (3). First semester.
- Nut. 211.** Problems in Nutrition (3-5). Second semester.
- Nut. 212.** Nutrition for Community Service (3). First semester.
- Foods and Nut. 220.** Seminar (1). First and second semesters.
- Foods and Nut. 221.** Research. First and second semesters.

E. Home Economics Extension

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- H. E. Ext. 100.** Methods in Home Economics Extension (3). Second semester

HORTICULTURE

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Hort. 101, 102.** Technology of Fruits (2, 2). Two hours a week, first and second semesters. Prerequisite, Bot. 101. Haut.
- Hort. 103, 104.** Technology of Vegetables (2, 2). Two hours a week, first and second semesters. Prerequisite, Bot. 101.
- Hort. 105.** Technology of Ornamentals (2). Two hours a week, first or second semester. Prerequisite, Bot. 101. Link.
- Hort. 106.** World Fruits and Nuts (2). Second semester. Haut.
- Hort. 107, 108.** Plant Materials (3, 3). Two lectures and one laboratory period a week, first and second semesters. Prerequisite, Bot. 1. Cornell.
- Hort. 114.** Systematic Pomology (3). Two lectures and one laboratory period a week, first semester. Given in alternate years. Haut.
- Hort. 116.** Systematic Olericulture (3). Two lectures and one laboratory period a week, first semester. Given in alternate years. Walls.

- Hort. 126. Nutritional Analyses of Processed Crops (3).** One lecture and two laboratory periods a week. Prerequisites, Chem. 33 and 34, Bot. 101.
- Hort. 159. Nursery Management (3).** Second semester. Two lectures and one laboratory period a week. Prerequisites or concurrently, Hort. 62; 107; 108.

FOR GRADUATES

- Hort. 201, 202. Experimental Pomology (3, 3).** Three hours a week, first and second semesters. Prerequisite, Bot. 101. Schrader.
- Hort. 203, 204. Experimental Olericulture (2, 2).** Two hours a week, first and second semesters. Prerequisite, Bot. 101.
- Hort. 205. Experimental Pomology (3).** Second semester. This course is a continuation of Hort. 201, 202. Schrader.
- Hort. 206. Horticulture Cyto-Genetics (3).** Second semester. Prerequisites, Zool. 104, Bot. 101, Bot. 201, or equivalents. A course dealing with the field of cyto-genetics in relation to horticulture. ———.
- Hort. 207. Methods of Horticultural Research (3).** Second semester. One lecture and one four-hour laboratory period a week. A critical study of research methods which are or may be used in horticulture. Scott and Staff.
- Hort. 208. Advanced Horticultural Research (2 to 12).** First and second semesters. Credit granted according to work done. Staff.
- Hort. 209. Advanced Seminar (1).** First and second semesters. Five credit hours for five semesters can be obtained. Oral reports with illustrative material are required on special topics or recent research publications in horticulture. Haut and Staff.

JOURNALISM

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Journ. 160. News Editing, I (3).** Two lectures and one laboratory period a week, first semester. Wood.
- Journ. 161. News Editing, II (3).** Two lectures and one laboratory period a week, second semester. Wood.
- Journ. 164. Magazine Writing (3).** Two lectures and one laboratory period a week, first semester. Bryan.
- Journ. 165. Feature Writing (3).** Two lectures and one laboratory period a week, second semester. Bryan.
- Journ. 174. Editorial Writing (3).** Two lectures and one laboratory period a week, first semester. Estabrook.

Journ. 175. Reporting of Public Affairs (3). Two lectures and one laboratory period a week, second semester. Prerequisite, Journ. 11. Wood.

Journ. 176. Evaluation of Current Journalistic Practice (3). Two lectures and one laboratory period a week, second semester. Bryan.

MATHEMATICS

Special Departmental Requirements

MASTER OF ARTS

Before a candidate will be recommended for admission to candidacy the candidate will be required to:

1. Demonstrate a reading knowledge of a foreign language of scientific importance.

2. Pass a preliminary examination. The examination covers the candidate's mastery of undergraduate and graduate studies in both major and minor fields. Ordinarily only one re-examination, to be held not before a semester has lapsed, may be given.

DOCTOR OF PHILOSOPHY

Before submitting himself for the preliminary examination required for admission to candidacy the student is expected to have acquired a background of mathematical knowledge represented by the following group of graduate studies: Analysis, four semesters; Algebra, two semesters; Geometry or Topology, two semesters; Applied Mathematics or Physics, two semesters.

A. Algebra

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Math. 100, 101. Higher Algebra (3, 3). (Not offered 1949-1950.) Pre-requisites, Math. 20, 21, or equivalent. Good.

Math. 102. Theory of Equations (3). First semester. Prerequisites, Math. 20, 21, or equivalent. Good.

Math. 103. Introduction to Modern Algebra (3). Prerequisites, Math. 20, 21, or equivalent. (Not offered 1949-1950.) Good.

FOR GRADUATES

Math. 200, 201. Modern Algebra (3, 3). (Not offered 1949-1950.) Pre-requisite, Math. 103, or consent of instructor. Good.

Math. 202. Matrix Theory (3). Second semester. Prerequisite, Math. 103, or consent of instructor. Good.

Math. 204, 205. Topological Groups (3, 3). First and second semesters. Prerequisite, consent of instructors. Good, Hall.

Math. 271. Selected Topics in Algebra (3). Arranged.

B. Analysis

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Math. 110, 111. **Advanced Calculus (3, 3).** First and second semesters. Prerequisites, Math. 20, 21, or equivalent.
- Math. 114, 115. **Differential Equations (3, 3).** Math. 114 will be given second semester. Math. 115 not offered 1949-1950. Prerequisite, Math. 20, 21, or equivalent. Leutert.
- Math. 116. **Introduction to Complex Variable Theory (3).** (Not offered 1949-1950.) Prerequisites, Math. 20, 21, or equivalent. Open to students of engineering and the physical sciences. Graduate students to mathematics should enroll in Math. 210, 211.
- Math. 117. **Fourier Series (3).** (Not offered 1949-1950.) Prerequisite, Math. 114, or equivalent.

FOR GRADUATES

- Math. 210, 211. **Functions of a Complex Variable (3, 3).** First and second semesters. Prerequisites, advanced calculus.
- Math. 213, 214. **Functions of a Real Variable (3, 3).** (Not offered 1949-1950.) Prerequisite, advanced calculus.
- Math. 215, 216. **Analysis (3, 3).** First and second semesters. Prerequisite, advanced calculus, and a course in complex variable theory. Truesdell.
- Math. 272. **Selected Topics in Analysis.** To be arranged.. Weinstein.

C. Geometry and Topology

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Math. 122, 123. **Elementary Topology (3, 3).** First and second semesters. Prerequisites, Math. 20, 21, or equivalent. Hall.
- Math. 124, 125. **Introduction to Projective Geometry (3, 3).** (Not offered 1949-1950.) Prerequisites, Math. 20, 21, or equivalent. Jackson.
- Math. 126. **Introduction to Differential Geometry (3).** (Not offered 1949-1950.) Prerequisite, Math. 20, 21, or equivalent. Vanderslice.
- Math. 128, 129. **Higher Geometry (3, 3).** First and second semesters. Prerequisite, two years of college mathematics. Open to students in the College of Education.

FOR GRADUATES

- Math. 220, 221. **Differential Geometry (3, 3).** (Not offered 1949-1950.) Prerequisite, Math. 126, or equivalent. Jackson.
- Math. 223, 224. **Combinatorial Topology (3, 3).** (Not offered 1949-1950.)

- Math. 225, 226. **Set-theoretic Topology (3, 3)**. First and second semesters. Prerequisite, advanced calculus. (Not offered 1949-1950.) Hall.
- Math. 227. **Tensor Analysis (3)**. Second semester. Prerequisites, Math. 110, 111, 134, or equivalent.
- Math. 273. **Selected Topics in Geometry and Topology (3)**. Arranged.

D. Applied Mathematics

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Math. 130, 131. **Analytic Mechanics (3, 3)**. Prerequisites, Math. 20, 21, or equivalent. (Not offered 1949-1950.)
- Math. 132, 133. **Advanced Mathematics for Engineers and Physicists (3, 3)**. First and second semesters. Prerequisites, Math. 20, 21, or equivalent. Vanderslice.
- Math. 134. **Vector Analysis (3)**. First and second semester. Prerequisites, Math. 20, 21, or equivalent. Vanderslice.
- Math. 135. **Numerical Analysis (3)**. (Not offered 1949-1950.) Prerequisite, Math. 114, or equivalent.
- Math. 139. **Operational Calculus (3)**. (Not offered 1949-1950.) Prerequisite, Math. 64, or equivalent. Intended for students of engineering and physics.

FOR GRADUATES

- Math. 230, 231. **Applied Mathematics (3, 3)**. First and second semesters. Prerequisite, advanced calculus and differential equations. Martin.
- Math. 232, 233. **Partial Differential Equations of Mathematical Physics (3, 3)**. First and second semesters. Prerequisites, advanced calculus and differential equations. Martin.
- Math. 234. **Potential Theory (3)**. Prerequisites, Math. 110, 111, or equivalent. (Not offered 1949-1950.) Weinstein.
- Math. 235. **Advanced Numerical Analysis (3)**. Second semester. Prerequisites, Math. 115, 135, or equivalent. (Not offered 1949-1950.)
- Math. 236. **Mathematical Theory of Hydrodynamics (3)**. (Not offered 1949-1950.) Prerequisite, a course in complex variable theory. Weinstein.
- Math. 237. **Mathematical Theory of Elasticity (3)**. (Not offered 1949-1950.) Prerequisites, Math. 110, 111, or equivalent. Weinstein.
- Math. 238. **Mathematical Theory of Continuous Media (3)**. (Not offered 1949-1950.) Prerequisites, vector or tensor analysis and consent of instructor. Truesdell.
- Math. 274. **Selected Topics in Applied Mathematics (2)**. Arranged.

E. Statistics

- Math. 150, 151.** Probability (3, 3). (Not offered 1949-1950.) Prerequisite, differential and integral calculus.
- Math. 152, 153.** Mathematical Statistics (2, 2). First and second semesters. Prerequisite, differential and integral calculus.
- Math. 154, 155.** Applications of Statistics (3, 3). First and second semesters. Two lectures and one two-hour laboratory period per week. Prerequisites, Math. 20, 21, or equivalent.
- Math. 156.** Biological Statistics (2). Second semester. Prerequisite, consent of instructor.

F. Colloquium and Research

FOR GRADUATES

- Math. 290.** Colloquium. First and second semesters.
- Math. 300.** Research. Arranged.

PHILOSOPHY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Phil. 101.** Ancient Philosophy (3). First semester.
- Phil. 102.** Modern Philosophy (3). Second semester. Prerequisite, Phil. 101.
- Phil. 111.** Medieval Philosophy (3). First semester. Prerequisite, Phil. 101. (Not offered in 1949-1950; to be offered in 1950-1951.)
- Phil. 112.** Recent and Contemporary Philosophy (3). Second semester. Prerequisite, Phil. 101.
- Phil. 121.** American Philosophy (3). First semester.
- Phil. 151.** Ethics (3). First semester. Prerequisite (after June, 1950), Phil. 2 or one year of philosophy. Baylis.
- Phil. 191.** Topical Investigations (3). Each semester. Staff.

FOR GRADUATES

Graduate instruction in the Department of Philosophy is carried on mainly by independent investigation of special topics under individual supervision. Any of the courses listed below may be elected more than once. Course selections require the approval of the department chairman.

- Phil. 201.** Research in Philosophy (3). Each semester. Staff.
- Phil. 203.** Selected Problems in Philosophy (3). Each semester. Staff.
- Phil. 205.** Seminar in the History of Philosophy (3). First semester. Staff.

- Phil. 206. Seminar in the Problems of Philosophy (3). Second semester.
Staff.

PHYSICAL EDUCATION, HEALTH AND RECREATION

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- P. E. 100. Kinesiology (3). First and second semesters.
- P. E. 101, 103. Organization and Officiating in Intramurals (2, 2). First and second semesters.
- P. E. 112. History of Dance (3). First semester. Prerequisite, P. E. 52, 54, 56, 58.
- P. E. 113, 115. Methods and Materials for Secondary Schools, I (2, 2). Two lectures and two laboratories a week.
- P. E. 114, 116. Methods and Materials for Secondary Schools, II (2, 2). Two lectures and two laboratory hours a week.
- P. E. 140. Therapeutics (3). First and second semesters. Prerequisite, P. E. 100.
- P. E. 150. History and Philosophy of Physical Education (2). Second semester.
- P. E. 170. Principles of Physical Education (3). First and second semesters.
- P. E. 180. Measurements in Health and Physical Education (3). First and second semesters.
- P. E. 181. Training and Conditioning (3). Second semester.
- P. E. 190. Health Administration and Supervision of Physical Education and Recreation (3). First and second semesters.

FOR GRADUATES

- P. E. 200. Departmental Seminar (1-2). First and second semesters and summer. Gloss and Deach.
- P. E. 201. Foundations in Physical Education, Health and Recreation (3). First and second semesters. Deach and Field.
- P. E. 203. Supervisory Techniques in Physical Education, Health and Recreation (3). First and second semesters and alternate summers. Hutto.
- P. E. 205. Administration of Athletics (2). First and second semesters and summer. Burnett.
- P. E. 210. Comparative Problems in Physical Education (2). First and second semesters. Gloss.
- P. E. 230. Contemporary Physical Education (3). First and second semesters and alternate summers. Gloss.

P. E. 250. Survey in the Area of Physical Education, Health and Recreation (6). First and second semesters and summers. Gloss.

P. E. 260. Research (1-6). First and second semesters and summers. Gloss and Burnett.

A. Health Education

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Hea. 110. Health Service and Supervision (3). First and second semesters.

Hea. 112. Home Nursing (2). First semester.

Hea. 114. Health Education for Elementary Schools (2). First and second semesters.

Hea. 120. Teaching Health (2). First and second semesters. Prerequisite, Hea. 40, or equivalent.

Hea. 130. Organization and Administration of Health Education (3). First and second semesters. Elective.

FOR GRADUATES

Hea. 220. Principles and Practices of Health Education (3). First and second semesters and alternate summers. Burnett.

Hea. 240. Advancements in Modern Health (3). First and second semesters and summer. Burnett.

B. Recreation Education

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Rec. 100. Co-Recreational Games and Programs (2). First and second semesters.

Rec. 102. Recreational Games for the Elementary School (2). First semester.

Rec. 110. Nature Lore (1-3). Second semester. (An evening course and six Saturdays and Sundays during April and May given in Washington.)

Rec. 120. Camp Administration and Leadership (3). First and second semesters.

Rec. 130. Principles and Practice of Recreation (3). First and second semesters.

Rec. 140. Observation and Service in Recreation (5). First and second semesters.

Rec. 170. Organization and Administration of Recreation (3). First and second semesters.

FOR GRADUATES

Rec. 210. Philosophy of Recreation (2). First and second semesters and alternate summers. Gloss.

- Rec. 220. Contemporary Recreation (3).** First and second semesters and alternate summers. Gloss.

PHYSICS

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Phys. 100. Advanced Experiments.** Three hours' laboratory work for each credit hour. One or more credits may be taken concurrently. Prerequisites, Phys. 52 or 54 and four credits in Phys. 60. Laboratory fee, \$6.00 per credit hour. Staff.
- Phys. 101. Laboratory Arts (1).** Four hours laboratory a week, second semester. Prerequisite, two credits Phys. 100. Laboratory fee, \$6.00. Staff.
- Phys. 102. Optics (3).** Three lectures a week, first semester. Prerequisites, Phys. 11 or 21; Math. 21. Cooper.
- Phys. 104, 105. Electricity and Magnetism (3, 3).** Three lectures a week, first and second semesters. Prerequisites, Phys. 11 or 21; Math. 21. Cooper.
- Phys. 106, 107. Theoretical Mechanics (3, 3).** Two lectures a week, first and second semesters. Prerequisites, Phys. 11 or 21; Math. 21. Morgan.
- Phys. 112, 113. Modern Physics (2, 2).** Two lectures a week. Prerequisite, advanced standing in physics and mathematics. Cooper.
- Phys. 116, 117. Fundamental Hydrodynamics (3, 3).** Three lectures a week, first and second semesters. Prerequisites, Phys. 107 and Math. 21. Kennard.
- Phys. 120, 121. Experimental Nuclear Physics (3, 3).** Two lectures and one laboratory period a week, first and second semesters. Prerequisites, Phys. 113 and two credits in Phys. 100. Johnson.
- Phys. 126. Kinetic Theory of Gases (3).** Prerequisites, Phys. 107 and Math. 21, or equivalent. Kennard.

FOR GRADUATES

Of the following courses, 200, 201, 212 and 213 are given every year; all others will be given according to the demand.

- Phys. 200, 201. Introduction to Theoretical Physics (5, 5).** Five lectures a week, first and second semesters. Myers.
- Phys 202, 203. Advanced Dynamics (2, 2).** Two lectures a week. Prerequisite, Phys. 200.
- Phys. 204. Electrodynamics (4).** Four lectures a week. Prerequisite, Phys. 201. Iskraut.
- Phys. 206. Physical Optics (3).** Prerequisite, Phys. 201. Myers.

- Phys. 208, 209. Thermodynamics (2, 2). Prerequisite, Phys. 201 or equivalent. Cooper.
- Phys. 210, 211. Statistical Mechanics and the Kinetic Theory of Gases (2, 2). Two lectures a week. Prerequisites, Phys. 112 and 201. McMillen.
- Phys. 212, 213. Introduction to Quantum Mechanics (2, 2). Two lectures a week, first and second semesters. Prerequisites, Phys. 201. Brickwedde.
- Phys. 214, 215. Theory of Atomic Structure and Spectral Lines (2, 2). Two lectures a week. Prerequisite, Phys. 213. McMillen.
- Phys. 216, 217. Molecular Structure (2, 2). Two lectures a week. Prerequisite, Phys. 213. Brickwedde.
- Phys. 218, 219. X-Rays and Crystal Structure (3, 3). Three lectures a week, first and second semesters. Morgan.
- Phys. 220. Application of X-Ray and Electron Diffraction Methods (2). Two laboratory periods a week. Morgan.
- Phys. 222, 223. Boundary-Value Problems of Theoretical Physics (2, 2). Prerequisite, Phys. 201.
- Phys. 224, 225. Supersonic Aerodynamics and Compressible Flow (2, 2). Prerequisite, Phys. 201. McMillen.
- Phys. 226, 227. Theoretical Hydrodynamics (3, 3). Prerequisite, elementary hydrodynamics. Kennard.
- Phys. 228, 229. The Electron (2, 2). Prerequisites, Phys. 204 and Phys. 213. Johnson.
- Phys. 230. Seminar (1). First and second semesters.
- Phys. 232, 233. Hydromechanics Seminar (1, 1). Kennard.
- Phys. 234, 235. Nuclear Physics (2, 2). Prerequisite, Phys. 213. Johnson.
- Phys. 236. Theory of Relativity (3). Prerequisite, Phys. 200. Iskraut.
- Phys. 238. Quantum Theory—selected topics (3). Prerequisite, Phys. 236. Iskraut.
- Phys. 240, 241. Theory of Sound and Vibrations (2, 2). Prerequisite, Phys. 201. McMillen.
- Phys. 242, 243. Theory of Solids (2, 2). Two lectures a week, first and second semesters. Prerequisite, Phys. 213. Myers.
- Phys. 250. Research. Credit according to work done. Laboratory fee, \$6.00 per credit hour.

POULTRY HUSBANDRY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- P. H. 104. Poultry Marketing Problems (3). Two lectures and one laboratory period a week, first semester. Gwin.
- P. H. 105. Egg Marketing Problems (3). Two lectures and one laboratory period a week, second semester. Gwin.
- P. H. 107. Poultry Industrial and Economic Problems (2). First semester. Staff.
- P. H. 108. Special Poultry Problems (1-2). Assigned problems, first and second semesters. Staff.
- Poultry Hygiene. See V. S. 107.
- Avian Anatomy. See V. S. 108.
- Preservation of Poultry Products. See F. Tech. 108.

FOR GRADUATES

- P. H. 201. Advanced Poultry Genetics (3). First semester. Prerequisite, P. H. 100, or equivalent. Jull.
- P. H. 202. Advanced Poultry Nutrition (3). Two lectures and one laboratory period a week, second semester. Prerequisite, P. H. 101, or equivalent.
- P. H. 203. Physiology of Reproduction of Poultry (3). Two lectures and one laboratory period a week, first semester. Prerequisite, P. H. 102, or equivalent. Shaffner.
- P. H. 204. Poultry Seminar (1). First and second semesters. Staff.
- P. H. 205. Poultry Literature (1-4). First and second semesters. Staff.
- P. H. 206. Poultry Research. Credit in accordance with work done. Staff.
- P. H. 207. Poultry Research Techniques (2). One lecture and one laboratory period a week, first semester. Staff.

PSYCHOLOGY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Graduate credit will be assigned only for students certified by the Department of Psychology as qualified for graduate standing.

- Psych. 106. Statistical Methods in Psychology (3). First and second semesters. Schaefer.
- Psych. 110. Educational Psychology (3). First and second semesters. Schaefer.
- Psych. 121. Social Psychology (3). First and second semesters.

- Psych. 122. Advanced Social Psychology (3). Second semester.
- Psych. 125. Child Psychology (3). First semester. Schaefer.
- Psych. 126. Developmental Psychology (3). Second semester. Schaefer.
- Psych. 127. Psychology of Early Man (3). Second semester. Sprowls.
- Psych. 128. Human Motivation (3). First semester. Cofer.
- Psych. 131. Abnormal Psychology (3). Second semester. Sprowls.
- Psych. 136. Applied Experimental Psychology (3). Second semester. Walker.
- Psych. 140. Psychological Problems in Advertising (3). First semester.
- Psych. 142. Techniques of Interrogation (3). Second semester. Hackman.
- Psych. 145. Introduction to Experimental Psychology (3). First and second semesters. Laboratory fee, \$4.00. Walker.
- Psych. 150. Tests and Measurements (3). First semester. Laboratory fee, \$4.00. Smith.
- Psych. 155. Psychological Techniques in Vocational Counseling (3). Second semester. Smith.
- Psych. 161. Psychological Techniques in Personnel Administration (3). Second semester. Schaefer.
- Psych. 167. Psychological Problems in Aviation (3). Second semester. Walker.
- Psych. 191, 192. General Experimental Psychology (3, 3). First and second semesters. Hackman.
- Psych. 194. Independent Study in Psychology (3). First and second semesters. Staff.
- Psych. 195. Minor Problems in Psychotechnology (3). First and second semesters. Staff.
- Psych. 198. Proseminar: Current Research in Psychotechnology (3). Second semester. Staff.

FOR GRADUATES

- Psych. 203, 204. Seminar: Review of Current Technological Researches (3, 3). First and second semesters. Staff.
- Psych. 205, 206. Historical Viewpoints and Current Theories in Psychology (3, 3). First and second semesters. Hackman, Cofer.
- Psych. 210. Occupational Information (3). Second semester. Prerequisite, Psych. 150.

- Psych. 211. Job Analysis and Description (3). First semester. Prerequisite, Psych. 210.
- Psych. 220, 221. Counseling Techniques (3, 3). First and second semesters. Prerequisite, Psych. 210. Smith.
- Psych. 222. Rehabilitation Techniques (3). Second semester. Prerequisite, Psych. 220.
- Psych. 223. Diagnosis and Correction of Reading Difficulties (3). First semester. Prerequisite, Psych. 221.
- Psych. 224. Counseling for Marital Problems (3). Second semester. Prerequisite, Psych. 221.
- Psych. 225. Participation in Counseling Clinic (3). First semester. Prerequisite, Psych. 221. Smith.
- Psych. 230. Determinants of Human Efficiency (3). First semester. Prerequisite, Psych. 128. Walker.
- Psych. 231. Training Procedures in Industry (3). First semester. Prerequisite, Psych. 230.
- Psych. 233. Social Organization in Industry (3). First semester. Prerequisite, Psych. 230.
- Psych. 241. Controlled Publicity (3). First semester. Prerequisite, consent of instructor. Hackman.
- Psych. 242. Measurement of Group Reaction (3). Second semester. Prerequisite, Psych. 241. Hackman.
- Psych. 250, 251. Development and Validation of Predictors (3, 3). First and second semesters. Prerequisite, Psych. 150. Schaefer.
- Psych. 252, 253. Advanced Statistics (3, 3). First and second semesters. Prerequisite, Psych. 106. Hackman.
- Psych. 260, 261. Individual Tests (3, 3). First and second semesters. Laboratory fee, \$4.00. Prerequisite, Psych. 150. Cofer.
- Psych. 263. Appraisal of Interests (3). Second semester. Prerequisite, Psych. 262. Schaefer.
- Psych. 264, 265. Projective Tests (3, 3). First and second semesters. Laboratory fee, \$4.00. Prerequisite, Psych. 261. Cofer.
- Psych. 266, 267. Theories of Personality and Motivation (3, 3). First and second semesters. Cofer.
- Psych. 270. Advanced Abnormal Psychology (3). First semester. Prerequisite, Psych. 131. Sprowls.
- Psych. 271. Special Testing of Disabilities (3). Second semester. Prerequisite, Psych. 270.

- Psych. 272, 273. Individual Clinical Diagnosis (3, 3). First and second semesters. Prerequisite, Psych. 261. Cofer.
- Psych. 274. Individual Therapy (3). First semester. Prerequisite, Psych. 261.
- Psych. 275. Group Therapy (3). Second semester. Prerequisite, Psych. 274.
- Psych. 278. Seminar in Clinical Psychology for Teachers (3). First semester. Prerequisite, consent of instructor. Sprowls.
- Psych. 280. Physiological Psychology (3). First semester. Prerequisite, consent of instructor. Walker.
- Psych. 290, 291. Research for Thesis (3, 3). First and second semesters. Staff.

SOCIOLOGY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Soc. 113. The Rural Community (3). Second semester. Prerequisite, Soc. 1, or its equivalent. Hoffsommer.
- Soc. 114. The City (3). First semester. Prerequisite, Soc. 1, or its equivalent. Houser.
- Soc. 115. Industrial Sociology (3). Second semester. Prerequisite, Soc. 1, or its equivalent. Imse.
- Soc. 118. Community Organization (3). Second semester. Prerequisite, Soc. 1, or its equivalent. Bailey.
- Soc. 121, 122. Population (3, 3). Three hours a week, first and second semesters. Prerequisite, Soc. 1, or its equivalent. Baker.
- Soc. 123. Ethnic Minorities (3). First semester. Prerequisite, Soc. 1, or its equivalent. Ebersole.
- Soc. 124. The Culture of the American Indian (3). Second semester. Prerequisite, Soc. 1, or its equivalent. Hutchinson.
- Soc. 131. Introduction to Social Service (3). First semester. Prerequisite, Soc. 1, or its equivalent. L. Houser.
- Soc. 141. Sociology of Personality (3). First semester. Prerequisite, Soc. 1, or its equivalent. Ebersole.
- Soc. 144. Collective Behavior (3). Second semester. Prerequisite, Soc. 1, or its equivalent. Ebersole.
- Soc. 145. Social Control (3). First semester. Prerequisite, Soc. 1, or its equivalent. Ebersole.
- Soc. 147. Sociology of Law (3). First semester. Prerequisite, Soc. 1, or its equivalent. Lejins.

- Soc. 153. Juvenile Delinquency (3).** First semester. Prerequisite, Soc. 1, or its equivalent. Lejins.
- Soc. 154. Crime and Delinquency Prevention (3).** Second semester. Prerequisites, Soc. 1, or its equivalent; Soc. 52, Soc. 153, or consent of instructor. Lejins.
- Soc. 156. Institutional Treatment of Criminals and Delinquents (3).** Second semester. Prerequisites, Soc. 1, or its equivalent; Soc. 52, Soc. 153, or consent of instructor. Lejins.
- Soc. 171. Family and Child Welfare (3).** First semester. Prerequisite, Soc. 1, or its equivalent. Shankweiler.
- Soc. 173. Social Security (3).** First semester. Prerequisite, Soc. 1, or its equivalent. Hutchinson.
- Soc. 174. Public Welfare (3).** Second semester. Prerequisite, Soc. 1, or its equivalent. L. Houser.
- Soc. 183. Social Statistics (3).** Second semester. Prerequisite, Soc. 1, or its equivalent. Imse.
- Soc. 186. Sociological Theory (3).** Second semester. Prerequisite, Soc. 1, or its equivalent. Bailey.
- Soc. 196. Senior Seminar (3).** Second semester. Prerequisite, senior standing with major in Sociology. Hoffsommer.

FOR GRADUATES

- Soc. 201. Methods of Social Research (3).** First semester. Hoffsommer.
- Soc. 215. Community Studies (3).** First semester. Hoffsommer.
- Soc. 221. Population and Society (3).** Second semester. Staff.
- Soc. 224. Race and Culture (3).** Second semester. Staff.
- Soc. 241. Personality and Social Structure (3).** Second semester. Staff.
- Soc. 246. Public Opinion and Propaganda (3).** Second semester. Staff.
- Soc. 253. Advanced Criminology (3).** First semester. Lejins.
- Soc. 255. Seminar: Juvenile Delinquency (3).** First semester. Lejins.
- Soc. 257. Social Change and Social Policy (3).** First semester. Staff.
- Soc. 262. Family Studies (3).** Second semester. Shankweiler.
- Soc. 282. Sociological Methodology (3).** Second semester. Staff.
- Soc. 285. Seminar: Sociological Theory (3).** First semester. Bailey.
- Soc. 290. Research in Sociology.** Credit to be determined. Staff.
- Soc. 291. Special Social Problems.** First and second semesters. Credit to be determined. Staff.

SPEECH AND DRAMATIC ART

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Speech 101. Radio Speech (3). First semester. Prerequisite, Speech 4, Laboratory fee, \$2.00. Batka.
- Speech 102. Radio Production (3). Second semester. Consent of instructor. Laboratory fee, \$2.00. Batka.
- Speech 103, 104. Speech Composition and Rhetoric (3, 3). First and second semesters. Golden.
- Speech 105. Pathology (3). First semester. Ansberry.
- Speech 106. Clinic (3). Second semester. Prerequisite, Speech 105. Ansberry.
- Speech 107. Advanced Oral Interpretation (3). Second semester. Prerequisite, Speech 13. Provenson.
- Speech 110. Teacher Problems in Speech (3). Second semester. For students who intend to teach. Hendricks.
- Speech 111. Seminar (3). Second semester. Ehrensberger.
- Speech 112. Phonetics (3). Second semester. Ansberry.
- Speech 113. Play Production (3). Second semester. Harris.
- Speech 114. Costuming (3). First semester. One lecture and two laboratories a week.
- Speech 115. Radio in Retailing (3). First semester. Prerequisites, Speech 1, 2; English 1, 2. Laboratory fee, \$2.00. Batka.
- Speech 116. Radio Announcing (3). Second semester. Prerequisite, Speech 101. Laboratory fee, \$2.00. Batka.
- Speech 117. Radio Continuity Writing (3). First semester. A study of the principles and methods of writing for broadcasting. Application will be made in the writing of the general types of continuity. Admission by consent of instructor. Coppinger.
- Speech 118. Advanced Radio Writing (3). Second semester. Prerequisite, Speech 117. Advanced work with emphasis upon the dramatic form. Admission by consent of instructor. Coppinger.
- Speech 119. Radio Acting (3). Second semester. A workshop course designed to give the student practice in radio acting. Admission by consent of the instructor. Batka.
- Speech 120. Advanced Speech Pathology (3). Second semester. Prerequisite, Speech 105. A continuation of Speech 105. Ansberry.
- Speech 121. Stage Design (3). Second semester. Prerequisites, Speech 14, 15. The planning of stage settings and the application of the principles of design to the dramatic production. Admission by consent of the instructor. Harris.

- Speech 122, 123. Radio Workshop (3, 3).** First and second semesters. A laboratory course dealing with all phases of producing a radio program. Admission by consent of instructor. Laboratory fee, \$2.00. Batka.
- Speech 124, 125. American Public Address (3, 3).** First and second semesters. The first semester covers the period from Colonial times to the Civil War period. The second semester covers from the Civil War period through the contemporary period. Golden.
- Speech 126. Semantic Aspects of Speech Behavior (3).** First semester. An analysis of speech and language habits from the standpoint of General Semantics. Hendricks.
- Speech 129, 130. Play Directing (2, 2).** A lecture-laboratory course dealing with the fundamentals of script cutting, pacing, movement, blocking and rehearsal routine as applied to the directing of plays. Mayer.

FOR GRADUATES

The Department maintains a reciprocal agreement with Walter Reed General Hospital whereby clinical practice may be obtained at the Army Audiology and Speech Correction Center, Forest Glen, Maryland.

- Speech 200. Thesis (3-6).** Credit in proportion to work done and results accomplished. Staff.
- Speech 201. Special Problems (2-4).** Arranged. Staff.
- Speech 210. Anatomy and Physiology of Speech and Hearing (3).** A study of the anatomy and physiology of the auditory and speech mechanisms. Glorig.
- Speech 211. Advanced Clinical Practice (3).** A comprehensive survey of the entire field of present-day clinical practice. Glorig.
- Speech 212. Advanced Speech Pathology (3).** Etiology and therapy for organic and functional speech disorders. Ansberry.
- Speech 213. Speech Problems of the Hard of Hearing (3).** Correction of abnormal speech habits and instruction in speech conservation. Baltzer.
- Speech 214. Clinical Audiometry (3).** Testing of auditory acuity with pure tones and speech. Sunday.
- Speech 215. Auditory Training (3).** Orientation and adjustment of patients in the use of hearing aids. Staff.
- Speech 216. Speech Reading (3).** A course of training designed to present the fundamentals of speech reading. Baughman.
- Speech 217. Clinical Practice in the Selection of Prosthetic Appliances (3).** A laboratory course in modern methods of utilizing electronic hearing aids. Staff.

Speech 218. Problems of Hearing and Deafness (3). The adjustment of the individual with a hearing impairment socially, emotionally and vocationally. Staff.

VETERINARY SCIENCE

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- V. S. 101. Comparative Anatomy (3). Two lectures and one laboratory period a week, first semester Coffin.
- V. S. 102. Animal Hygiene (3). Two lectures and one laboratory period a week, second semester. Coffin.
- V. S. 103. Regional Comparative Anatomy (3). One lecture and one laboratory period a week, first semester. Coffin.
- V. S. 108. Avian Anatomy (3). Two lectures and one laboratory period a week, first semester. DeVolt.
- V. S. 107. Poultry Hygiene (3). Two lectures and one laboratory period a week, second semester. DeVolt.

FOR GRADUATES

- V. S. Animal Disease Problems (2-6). Arranged. Staff.
- V. S. 202. Animal Disease Research (2-6). Arranged. Staff.
- V. S. 203. Electron Microscopy (2). One lecture and one laboratory period a week. Arranged. Staff.

ZOOLOGY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

Laboratory fees in Zoology are \$6.00 per semester.

- Zool. 101. Mammalian Anatomy (3). Three laboratory periods a week, second semester. Prerequisite, permission of instructor. Stringer.
- Zool. 102. General Animal Physiology (4). Two lectures and two laboratory periods a week, second semester. Prerequisites, one year of Chemistry, one course in Zoology. Phillips.
- Zool. 104. Genetics (3). First semester. Three lecture periods a week. Prerequisite, one course in Zoology or Botany. Burhoe.
- Zool. 108. Animal Histology (4). Two lecture and two laboratory periods a week, first semester. Prerequisite, one year of Zoology. Stringer.
- Zool. 110. Parasitology (4). First semester. Two lectures and two laboratory periods a week. Prerequisite, one year of Zoology. Negherbon.
- Zool. 116. Protozoology (4). Second semester. Two lectures and two laboratory periods a week. Prerequisites, Histology; Bacteriology desirable. Negherbon.

- Zool. 121. Principles of Animal Ecology (3).** Two lectures and one laboratory period a week, second semester. Prerequisites, one course in Zoology and one course in Chemistry. Littleford.
- Zool. 125. Fisheries Biology (3).** Two lectures and one laboratory period a week, first semester. Prerequisites, Zool. 5, 102. Littleford.
- Zool. 130. Aviation Physiology (3).** Three lectures a week, second semester. Prerequisite, permission of the instructor. Reynolds.

FOR GRADUATES

- Zool. 200. Ichthyology and Marine Zoology (4).** Two lectures and one laboratory period a week, first semester. Littleford.
- Zool. 201. Microscopical Anatomy (4).** Two lectures and two laboratory periods a week, second semester.
- Zool. 202. Animal Cytology (4).** Two lecture and two laboratory periods a week, first semester. Negherbon.
- Zool. 203. Advanced Embryology (4).** Two lectures and two laboratory periods a week, second semester. Burhoe.
- Zool. 204. Advanced Animal Physiology (4).** Two lectures and two laboratory periods a week, first semester. Phillips.
- Zool. 205. Hydrobiology (4).** Two lectures and two laboratory periods a week, second semester. Littleford.
- Zool. 206. Research.** Credit to be arranged. First and second semesters. Staff.
- Zool. 207. Zoology Seminar (1).** First and second semesters. One lecture a week. Staff.
- Zool. 208. Special Problems in General Physiology.** Hours and credits arranged. Second semester. Phillips.
- Zool. 220. Advanced Genetics (3).** Two lectures and one laboratory period a week, second semester. Prerequisite, Zool. 104. Burhoe.

SCHOOL OF DENTISTRY

DEPARTMENT OF ANATOMY

MINORS

- Anatomy 111. Human Gross Anatomy (8).** Two lectures and two laboratory periods per week throughout the dental school academic year. Hahn, Thompson, and Pollack.
- Anatomy 113. Human Neuroanatomy (4).** Three lectures and two laboratory periods for approximately eight week. Hahn, Thompson, and Pollack.

MAJORS

- Anatomy 211. Human Gross Anatomy.** Credits to be arranged. Same as course 111 but with additional instruction. Hahn, Thompson.
- Anatomy 213. Human Neuroanatomy.** Credits to be arranged. Same as course 113 but with additional instruction. Hahn, Thompson.
- Anatomy 216. Research.** Time and credit by arrangement. Staff.

DEPARTMENT OF BIOCHEMISTRY

MINORS

- Biochemistry 111. Principles of Biochemistry (6).** Two lectures, one conference and one laboratory period per week throughout the dental school academic year. Vanden Bosche.

MAJORS

- Biochemistry 211. Advanced Biochemistry.** Time and credits by arrangement. Vanden Bosche.
- Biochemistry 212. Research in Biochemistry.** Time and credits by arrangement. Prerequisite, 211. Vanden Bosche.

DEPARTMENT OF HISTOLOGY AND EMBRYOLOGY

MINORS

- Histology 112. Mammalian Histology and Embryology (6).** Two lectures and two laboratory periods per week throughout the dental school academic year. McCrea.

MAJORS

- Histology 212. Mammalian Histology and Embryology.** Number of credits by arrangement. Same as course 112 but with additional work and instruction of a more advanced nature. McCrea.
- Research in Histology 214.** Number of hours and credit by arrangement. Prerequisite, 112 or 212. McCrea.
- Research in Embryology 215.** Number of hours and credit by arrangement. Prerequisites by arrangement. McCrea.

SCHOOL OF MEDICINE

GROSS ANATOMY

MINORS

- Anat. 101. Human Gross Anatomy (10).** Total number of hours, approximately 350. Six conferences and lectures, eighteen laboratory hours per week throughout the first semester of every medical school year. Uhlenhuth, Figge, Krahl and Smith.

MAJORS

- Anat. 201. Human Gross Anatomy.** Number of credits by arrangement. Same course as Anat. 101, but with additional work of a more advanced nature. Uhlenhuth, Figge, Krahl and Smith.
- Anat. 202. Advanced Anatomy.** Number of hours and credits by arrangement. Prerequisite, Anat. 101 or 201. Uhlenhuth and Staff.
- Anat. 203. Research in Gross Anatomy.** Number of hours and credits by arrangement. Prerequisite, Anat. 202. Uhlenhuth and Staff.
- Anat. 204. Problems in Physiological Anatomy.** Number of hours and credits by arrangement. Prerequisites, Anat. 201, 202, and either Anat. 207 or 208. Uhlenhuth and Staff.

BACTERIOLOGY

MINORS

- Bact. 101. General Bacteriology (5).** Sixteen hours and 104 laboratory hours. Drs. Hachtel, McAlpine, and Levin.
- Bact. 102. Immunology (4).** Sixteen lectures and 56 laboratory hours. Drs. Hachtel, McAlpine, and Levin.

MAJORS

- Bact. 201. Special Problems.** Time and credit by arrangement.
- Bact. 202. Research.** Time and credit by arrangement.

BIOCHEMISTRY

MINORS

- Biochem. 101. Principles of Biochemistry (8).** Seven lectures and conferences and two three-hour laboratory periods a week for sixteen weeks. Prerequisites, inorganic, organic, and quantitative or physical chemistry. Schmidt and Staff.

MAJORS

- Biochem. 201.** Prerequisite, Biochem. 101. Credit proportioned to extent and quality of work accomplished. Schmidt and Weiland.
- Biochem. 202. Research.** Credit proportioned to extent and quality of work accomplished. Schmidt and Weiland.

HISTOLOGY, EMBRYOLOGY AND NEURO-ANATOMY

MINORS

- Hist. 101. Mammalian Histology (6).** Two lectures, ten laboratory hours per week, throughout the first semester of every medical school year. Lutz, Harne.

Hist. 102. Human Neurology (4). Three lectures and six laboratory hours per week for ten weeks of the second semester of every medical school year. Prerequisite, Hist. 101, or equivalent. Lutz, Harne.

MAJORS

Hist. 201. Mammalian Histology. Number of credits by arrangement. Same course as Hist. 101, but with additional work of a more advanced nature. Harne.

Hist. 202. Human Neurology. Number of credits by arrangement. Same course as Hist. 102, but with additional work of a more advanced nature. Prerequisite, Hist. 101 or 201.

Hist. 203. Research in Embryology, Histology or Neuro-Anatomy. Credit by arrangement. Open to students majoring in Prerequisites, Anat. 201; Hist. 201, 202. Harne.

PHARMACOLOGY

All students majoring in pharmacology with a view to obtaining the degree of Master of Science or Doctor of Philosophy should secure special training in anatomy, mammalian physiology, organic chemistry, and physical chemistry.

MINORS

Pharmacology 101, f.s. General Pharmacology (8). Three lectures and one laboratory. This course consists of 90 lectures and 30 laboratory periods of three hours each, offered each year.

Krantz, Carr, Iwamoto, Musser, Harne.

MAJORS

Pharmacology 202, f.s. General Pharmacology. Same as 101 for students majoring in pharmacology. Additional instruction and collateral reading are required. Krantz, Carr, Iwamoto, Musser, Harne.

Pharmacology 203. Chemotherapy. Credit in accordance with the amount of work accomplished. Krantz.

Pharmacology 204. Carbohydrate Metabolism. Credit in accordance with the amount of work accomplished. Krantz, Carr.

Pharmacology 205. Research. Credit in accordance with the amount of work accomplished. Krantz, Carr.

Pharmacology 206. Special Problems in Toxicology. Credit in accordance with the amount of work accomplished. Carr.

Pharmacology 207. Anesthesia. Credit in accordance with the work accomplished. Krantz, Carr.

PHYSIOLOGY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Physiology 101. Neurophysiology (3).** Two lectures a week, for fifteen weeks; ten three-hour laboratory periods; second semester. This course covers the physiology of muscle, peripheral nerve, central nervous system and sense organs. Amberson and Staff.
- Physiology 102. The Principles of Physiology (7).** Four lectures, one conference a week, for fifteen weeks; twenty-five four-hour laboratory periods; first semester. This course covers the physiology of circulation, respiration, digestion, the endocrines (including reproduction) and the kidney. Amberson and Staff.

FOR GRADUATES

- Physiology 201. Experimental Mammalian Physiology.** Time and credit by arrangement. Amberson and Smith.
- Physiology 202. Blood and Tissue Proteins (2).** One lecture a week, for thirty weeks. Amberson.
- Physiology 203. Physiology of Reproduction (2).** Two hours a week, lectures, conferences and seminars, for twenty weeks. Smith.
- Physiology 204. Electrophysiology (1).** One lecture a week, for fifteen weeks. Oster.
- Physiology 205. Seminar.** Credit according to work done. Amberson and Staff.
- Physiology 206. Research.** By arrangement with the head of the department. Staff.

SCHOOL OF PHARMACY

BACTERIOLOGY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Bact. 115. Serology and Immunology (3).** Three lectures and three laboratory periods a week, first semester. Shay.

FOR GRADUATES

- Bact. 200, 201. Chemotherapy (1, 1).** One lecture a week, first and second semesters. Offered in alternate years. Shay.
- Bact. 210. Special Problems in Bacteriology.** Laboratory course. Credit determined by amount and quality of work. Shay.
- Bact. 211. Public Health (2).** One lecture. Shay.
- Bact. 221. Research.** Credit determined by amount and quality of work. Shay.

BOTANY AND PHARMACOGNOSY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Bot. 101, 102. Taxonomy of the Higher Plants (2-4). One lecture and one laboratory period a week. Given in alternate years. Slama.
- Bot. 111, 113. Plant Anatomy (2-4). Two lectures a week. Slama.
- Bot. 112, 114. Plant Anatomy (2-4). Two laboratory periods a week. Prerequisites, Bot. 111, 113. Slama.

FOR GRADUATES

- Pharmacognosy 201, 202. Advanced Study of Vegetable Powders (4-8). Two lectures and two laboratory periods a week. Prerequisites, Bot. 111, 113, 112, 114. Slama.
- Pharmacognosy 211, 212. Advanced Pharmacognosy (4-8). Two lectures and two laboratory periods a week. Prerequisites, Bot. 111, 113, 112, 114. Slama.
- Pharmacognosy 220. Research. Credit according to amount and quality of work performed. Slama.

PHARMACEUTICAL CHEMISTRY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Pharm. Chem. 111, 113. Chemistry of Medicinal Products (2, 2). Three lectures a week, first and second semesters. Prerequisites, Chem. 35, 37, 53. Hager.
- Pharm. Chem. 112, 114.—Chemistry of Medicinal Products (2, 2). Two laboratory periods a week, either or both semesters. Prerequisites, Pharm. Chem. 111, 113, or may be taken simultaneously with Pharm. Chem. 111, 113. Hager.
- Chem. 142, 144. Advanced Organic Laboratory (2, 2). Two laboratory periods a week, any one or both semesters. Prerequisites, Chem. 19 or 23, and Chem. 37, 38. Staff.
- Chem. 146, 148. Identification of Organic Compounds (2, 2). One lecture and two laboratory periods a week, any one or both semesters. Prerequisites, Pharm. Chem. 111, 113, or Chem. 141, 143. Staff.
- Chem. 151, 153. Physiological Chemistry (2, 2). Two lectures a week, first and second semesters. Prerequisites, Chem. 35, 37 and Physiology 22. Chapman.
- Chem. 152, 154. Physiological Chemistry (2, 2). Two laboratory periods a week, first and second semesters. Prerequisites, Chem. 35, 37, 151, 153, or may be taken simultaneously with Chem. 151, 153. Chapman.

FOR GRADUATES

- Pharm. Chem. 201, 203. Survey of Pharmaceutical Chemistry (2, 2). Two lectures a week, first and second semesters. Prerequisites, Pharm. Chem. 111, 113. Hager.
- Pharm. Chem. 211, 213. Chemistry of the Alkaloids (2, 2). Two lectures a week, first and second semesters. Prerequisites, Pharm. Chem. 111, 113. Hager.
- Pharm. Chem. 220. Advanced Pharmaceutical Syntheses (2-6). Laboratory and conferences, either or both semesters. Prerequisites, Chem. 142, 144. Hager.
- Pharm. Chem. 222. Advanced Pharmaceutical Analyses (1-4). Laboratory and conferences, either or both semesters. Prerequisites, Chem. 146, 148. Hager.
- Pharm. Chem. 230. Pharmaceutical Chemistry Seminar (1). Required of students majoring in pharmaceutical chemistry. Hager.
- Pharm. Chem. 235. Research. Credit determined by amount and quality of work performed. Hager and Staff.
- Chem. 258. The Identification of Organic Compounds. An advanced course. Two to four laboratory periods a week, either semester. Prerequisites, Chem. 146, 148, or equivalent. Staff.

PHARMACOLOGY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Pharmacology 111. Official Methods of Biological Assay (4). Two lectures and two laboratory periods a week, first semester. Prerequisite, Pharmacology 51, 52. Chapman.

FOR GRADUATES

- Pharmacology 201, 202. Methods of Biological Assay (8). Two lectures and two laboratory periods a week, first and second semesters. Prerequisite, Pharmacology 111. Offered in alternate years. Chapman.
- Pharmacology 211, 212. Special Studies in Pharmacodynamics (8). Two lectures and two laboratory periods a week, first and second semesters. Prerequisites, Pharmacology 51 and 52 and the approval of the instructor. Chapman.
- Pharmacology 221, 222. Special Studies in Biological Assay Methods (4-8). Credit according to amount of work undertaken after consultation with the instructor. Laboratory work and conferences, first and second semesters. Prerequisites, Pharmacology 111, 201, 202. Offered in alternate years. Chapman.
- Pharmacology 250. Research Pharmacology. Properly qualified students may arrange semester hours' credit with the instructor. Chapman.

PHARMACY

FOR GRADUATES AND ADVANCED UNDERGRADUATES

- Pharmacy 101, 102. (3, 3.) Two lectures and one laboratory a week.
Prerequisite, consent of the instructor. Allen, Balassone.
- Pharmacy 111, 112. Advanced Prescription Compounding (3, 3). Two
laboratory periods a week. Allen, Meyers.
- Pharmacy 120. Hospital Management (2). Two lectures a week. Purdum.

FOR GRADUATES

- Pharmacy 201, 202. Advanced Pharmaceutical Technology (4, 4). Two
lectures and two laboratory periods a week. Purdum, Allen.
- Pharmacy 211, 212. Survey of Pharmaceutical Literature (1, 1). One lec-
ture a week. Purdum.
- Pharmacy 221, 222. History of Pharmacy (2, 2). Two lectures a week.
Given in alternate years. Purdum.
- Pharmacy 235. Research in Pharmacy. Credit and hours to be arranged.
Purdum.

PHYSICS AND PHYSICAL CHEMISTRY

- Chem. 187, 189. Physical Chemistry (3, 3). Three lectures a week, first
and second semesters. Prerequisites, Phys. 10, 11; Chem. 15, 35, 37.
Estabrook.
- Chem. 188, 190. Physical Chemistry (2, 2). Two laboratory periods a
week, first and second semesters. Prerequisite, Chem. 187, 189, or
may be taken simultaneously with these courses. Estabrook.
- Phys. 121, 122. Electricity and Magnetism (3, 3). Two lectures and one
laboratory period a week, first and second semesters. Given in alter-
nate years. Prerequisites, Phys. 10, 11; Math. 20, 21. Estabrook.
- Phys. 208. Thermodynamics (2, 2). Two lectures a week, first and second
semesters. Prerequisites, Phys. Chem. 187, 189, 188, 190. Given in
alternate years. Estabrook.

College of SPECIAL AND CONTINUATION STUDIES

ADMINISTRATIVE STAFF

GEORGE J. KABAT, *Director*

STANLEY J. DRAZEK, *Instructor-in-Charge, Baltimore Center*

GEORGE J. WEIGAND, *Guidance Counselor*

JEAN A. GARRETT, *Assistant to Director*

INSTRUCTIONAL STAFF, ALL CENTERS

GEORGE ABRAHAM, M.S., Instructor in Physics.
 MARTHA L. ADAMS, B.S., Assistant in Chemistry.
 WILLIAM R. AHRENDT, M.S., Lecturer in Electrical Engineering.
 JAMES R. ANDERSON, M.A., Instructor in Geography.
 MERLE ANSBERRY, Ph.D., Acoustic Audiologist, Lecturer in Audiology.
 WILLIAM BAILEY, Ph.D., Visiting Professor in Sociology.
 ADELE B. BALLMAN, Ph.D., Assistant Professor of English.
 HARRY BARD, M.A., Lecturer in Education.
 CHARLES B. BARKER, II, Ph.D., Lecturer in Mathematics.
 JAMES L. BATES, B.A., Instructor in History.
 GEORGE F. BATKA, M.A., Assistant Professor of Speech.
 RICHARD H. BAUER, Ph.D., Associate Professor of History.
 DAVID W. BEECHER, M.S., Lecturer in Engineering Electronics.
 HAROLD J. BENJAMIN, Ph.D., Dean of College of Education.
 ANN JOHNSTON BERRY, M.A., Instructor, College of Education.
 WARREN B. BEZANSON, M.A., Instructor in English.
 WALTER BLAKE, A.B., Study Assistant.
 HENRY H. BRECHBILL, Ph.D., Professor of Education; Assistant Dean.
 LEO P. BROPHY, Ph.D., Lecturer in History.
 GLEN D. BROWN, M.A., Professor and Head of Industrial Education.
 MARY K. CARL, B.S., Appraiser in Psychology.
 WILLIAM C. CARTER, Ph.D., Lecturer in Mathematics.
 GEORGE CHARLESWORTH, M.A., Study Assistant.
 VERNE E. CHATELAIN, Ph.D., Professor of History.
 WILSON R. CHERRY, M.S., Assistant Professor, Marine Engineering.
 CHARLES CLARK, Ph.D., Lecturer in History.
 HANNAH COLM, Ph.D., Lecturer in Education.
 DENSIL COOPER, Ph.D., Associate Professor of Physics.
 JOHN L. COULTER, JR., M.A., Assistant Professor of English.
 HERBERT A. CROSMAN, M.A., Assistant Professor of History.
 JANE H. CROW, M.S., Assistant Professor of Home Economics.
 HENRY P. DANTZIG, B.S., Instructor in Mathematics.
 WILLIAM E. DAVIES, Ph.D., Lecturer in Geography.
 KATHRYN DEAN, B.S., Laboratory Assistant.

- STEPHEN R. DEANE, M.A., Counselor, Department of Psychology.
LOIS W. DEBRULE, A.B., R.N., Director, School of Nursing and Nursing Service, Instructor in Nursing Education.
LEAH K. DICE, Ph.D., Lecturer in Psychology.
ROBERT G. DIXON, Ph.D., Assistant Professor in Government and Politics.
LINDEN S. DODSON, Ph.D., Lecturer in Education.
STANLEY J. DRAZEK, M.A., Instructor, College of Special and Continuation Studies.
CHARLES W. DUDDERAR, M.A., Lecturer in Business Education.
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JOHN C. EAKENS, B.S., Instructor in Mathematics.
LUKE E. EBERSOLE, M.A., Instructor in Sociology and Education.
RAY EHRENSBERGER, Ph.D., Professor and Head of Speech and Dramatic Art.
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RUFUS G. FELLERS, Ph.D., Lecturer in Electrical Engineering.
E. JAMES FERGUSON, M.A., Instructor in History.
WARREN R. FERRIS, Ph.D., Lecturer in Electrical Engineering.
JOHN G. FISCHER, M.A., Instructor in English.
MAE THERESE FISHER, Instructor in Speech.
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GEORGE E. FLETCHER, Lt. Col., Assistant Professor of Military Science.
SISTER MARY FLORENCE, R.N., B.S., Ph.G., Lecturer in Nursing Education.
JOHN H. FREDERICK, Ph.D., Professor of Transportation and Foreign Trade.
WESLEY M. GEWEHR, Ph.D., Professor of History.
FLORENCE M. GIPE, M.S., Director of Nursing Education and Nursing Service.
CARL W. GOHR, B.S., Assistant Professor of Civil Engineering.
JAMES L. GOLDEN, M.A., Instructor in Speech.
DONALD C. GORDON, Ph.D., Assistant Professor of History.
ARTHUR GRAD, Ph.D., Instructor in Mathematics.
JOSEPH W. GREENWOOD, Ph.D., Lecturer in Mathematics.
ALLAN G. GRUCHY, Ph.D., Professor of Economics.
RAY C. HACKMAN, Ph.D., Assistant Professor in Psychology.
LUDWIG HAMMERSCHLAG, Ph.D., Assistant Professor in Foreign Languages.
DUNCAN C. HARKIN, Ph.D., Lecturer in Mathematics.
JOHN E. HART, B.S., Lecturer in Electrical Engineering.
THOMAS M. HARWELL, JR., M.A., Instructor in English.
CHARLES A. HASLUP, M.Ed., Instructor in Music.
RICHARD HENDRICKS, M.A., Instructor in Speech.
R. A. HERRING, M.S., Lecturer in Electrical Engineering.
J. ROSS HEVERLY, Ph.D., Assistant Professor of Physics.
WILLIS D. HOLLAND, B.S., Instructor in Mathematics.
R. LEE HORNBAKE, Ph.D., Professor of Industrial Education.
HARRY B. HOSHALL, M.E., Associate Professor of Mechanical Engineering.

- JOHN R. HOWE, M.A., Instructor in Foreign Languages.
EDGAR D. HOYT, B.S., Lecturer in Mechanical Engineering.
WILLIAM J. HUCKSOLL, M.Ed., Lecturer in Industrial Education.
CHARLES E. HUTCHINSON, Ph.D., Assistant Professor of Sociology.
LOUIS C. HUTSON, Vocational Mining Instructor.
LOUIS E. HUTTO, Ph.D., Professor, Physical Education, Health and Recreation.
ROBERT T. HYDE, B.S., Instructor in English.
THOMAS P. IMSE, M.A., Instructor in Sociology.
RICHARD W. ISKRAUT, Ph.D., Associate Professor of Physics.
MONTGOMERY H. JOHNSON, Ph.D., Professor of Physics.
GEORGE J. KABAT, Ph.D., Director of College of Special and Continuation Studies.
MORRIS L. KALES, Ph.D., Lecturer in Mathematics.
CHESTER H. KATENKAMP, Ed.D., Lecturer in Education.
MARTIN KATZIN, M.S.E., Lecturer in Electrical Engineering.
GILBERT F. KINNEY, Ph.D., Associate Professor, U. S. Naval Postgraduate School, Lecturer in Chemistry.
FRANZ N. D. KURIE, Ph.D., Lecturer in Physics.
HERMANN H. KURZWEG, Ph.D., Lecturer in Mechanical Engineering.
OTIS E. LANCASTER, Ph.D., Lecturer in Mechanical Engineering.
ALCOTT J. LARSSON, A.B., Assistant Instructor in Physics.
NEAL G. LEBERT, M.A., Instructor in English.
DOROTHY L. LEGRAND, M.S., Instructor in Foods and Nutrition.
PETER P. LEJINS, Ph.D., Professor of Sociology.
EUGENE B. LINK, B.S., Lecturer in Industrial Education.
B. A. LIPPMAN, Ph.D., Lecturer in Physics.
EDWARD M. LITTLE, Ph.D., Lecturer in Physics.
EDWARD L. LONGLEY, M.Ed., Lecturer in Industrial Education.
BLAKE M. LORING, Ph.D., Lecturer in Mechanical Engineering.
BENJAMIN LUCAS, M.A., Instructor in Sociology.
LAURA P. MACCARTENEY, Director of Music, National Child Research Center.
JERRY MAGNER, M.A., Instructor in Government and Politics.
GEORGE N. MANQURIAN, M.S., Lecturer in Aeronautical Engineering.
F. DAVID MARSCHKA, A.B., Study Assistant.
ARTHUR E. MARSTON, Ph.D., Lecturer in Mathematics.
LYLE V. MAYER, M.A., Instructor in Speech.
WILLIAM J. McLARNEY, M.A., Associate Professor of Industrial Management.
HUGH B. McLEAN, B.S., Instructor in Mathematics.
EDNA B. McNAUGHTON, M.A., Professor of Nursery School Education.
L. KENTON MEALS, M.A., Instructor in Mathematics.
JESSIE W. MENNEKEN, M.S., Instructor in Mathematics.
A. BURTON METZGER, B.E.E., Lecturer in Industrial Safety Engineering.
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- MARTIN W. MOSER, M.A., Instructor in Government and Politics.
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DAVID S. MUZZEY, Ph.D., Associate Professor of Physics.
RALPH D. MYERS, Ph.D., Professor of Physics.
PAUL F. NEMENYI, Ph.D., Lecturer in Mathematics.
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LAWRENCE E. OLEWINE, M.A., Instructor in Industrial Education.
ALBERT G. PACKARD, M.A., Lecturer in Education.
ARTHUR S. PATRICK, M.A., Assistant Professor of Secretarial Training.
STANLEY PAWELEK, Ed.D., Lecturer in Industrial Education.
G. J. PERLOW, Ph.D., Lecturer in Physics.
FREDERICK PISTOR, Ph.D., Lecturer in Educational Psychology.
AUBREY O. PITTENGER, Ph.D., Lecturer in Education.
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HARRY POLACHEK, Ph.D., Lecturer in Mathematics.
JOHN PORTZ, M.A., Instructor in English.
DANIEL A. PRESCOTT, Ph.D., Professor of Education, Director of Institute
for Child Study.
RUDY PUGLIESE, M.A., Instructor in Speech.
HERMAN PUSIN, M.S., Lecturer in Aeronautical Engineering.
COLIN C. RAE, B.S., Laboratory Instructor in Electrical Engineering.
JOSEPH M. RAY, Ph.D., Professor and Head of Government and Politics.
HENRY R. REED, Ph.D., Professor of Electrical Engineering.
JAMES H. REID, M.A., Professor of Economics.
A. W. RICHESON, Ph.D., Associate Professor of Mathematics.
FRED D. RIGBY, Ph.D., Instructor in Mathematics.
HERBERT L. ROONEY, M.S.S.W., Chief Psychiatric Social Worker.
WILLIS C. SCHAEFER, Ph.D., Assistant Professor of Psychology.
JAMES SCHAEFLE, A.B., Study Assistant.
ALVIN W. SCHINDLER, Ph.D., Professor of Education.
MARK SCHWEIZER, Ph.D., Assistant Professor of Foreign Languages.
B. FRANK SEDWICK, M.A., Instructor in Foreign Languages.
NATHAN SEEMAN, M.S., Laboratory Instructor in Physics.
PAUL J. SELGIN, Ph.D., Lecturer in Electrical Engineering.
PAUL W. SHANKWEILER, Ph.D., Associate Professor of Sociology.
SOLOMON SHAPIRO, M.A., Graduate Assistant in Psychology.
DONALD E. SHAY, Ph.D., Associate Professor of Bacteriology.
JOHN R. SHOEMAKER, B.S., Lecturer in Electrical Engineering.
FRANK L. SIEVERS, M.A., Associate Professor of Education.
FRANK J. SLAMA, Ph.G., Ph.C., Ph.D., Associate Professor of Botany and
Pharmacognosy.
ZAKA I. SLAWSKY, Ph.D., Lecturer in Physics.
CHARLES V. L. SMITH, Ph.D., Lecturer in Electrical Engineering.
DAVID S. SPARKS, M.A., Instructor in History.

- REUBEN G. STEINMEYER, Ph.D., Professor of Government and Politics.
CHARLES T. STEWART, B.A., Lecturer in Education.
WARREN L. STRAUSBAUGH, M.A., Assistant Professor of Speech.
WILLIAM J. SVIRBELY, D.Sc., Professor of Chemistry.
GLENDON L. SWARTHOUT, M.A., Instructor in English.
HAROLD F. SYLVESTER, Ph.D., Associate Professor of Personnel Administration.
JOHN K. SYLVESTER, Ph.D., Assistant Professor of Economics.
CORWIN H. TAYLOR, Ed.D., Lecturer in Education, Department of School Music, Peabody Conservatory.
LIONEL W. THARCHER, Ph.D., Professor and Head of Business Organization and Administration.
F. THEILHEIMER, Ph.D., Lecturer in Mathematics.
HORACE M. TRENT, Ph.D., Lecturer in Operational Circuit Analysis.
CLIFFORD A. TRUESDELL, Ph.D., Assistant Professor of Mathematics.
GILBERT W. TUCK, M.A., Instructor in Foreign Languages.
MARY L. VAN BEBBER, B.A., Instructor in Speech.
E. G. VANDENBOSCHE, Ph.D., Professor of Biochemistry.
WILLIAM VANROYEN, Ph.D., Professor of Geography.
ANDREW VANTUYL, Ph.D., Lecturer in Mathematics.
JAMES A. VANZWOLL, Ph.D., Professor of Education.
IRVIN F. WAGNER, M.S., Instructor in Mathematics.
GUSTAVE S. WALL, M.A., Associate Professor of Industrial Education.
KENICHI WATANABE, Ph.D., Lecturer in Mathematics.
JOHN V. WEHAUSEN, Ph.D., Lecturer in Mathematics.
FRED W. WELLBORN, Ph.D., Professor of History.
GLADYS A. WIGGIN, Ph.D., Associate Professor of Education.
MAYNARD W. WOODBURY, M.A., Instructor in Business Organization.
HOWARD W. WRIGHT, Ph.D., Associate Professor of Business Administration.
GEORGE YATES, B.A., Study Assistant.
R. YVONNE ZENN, M.A., Assistant Professor of Physical Education.
HOWARD E. ZIEFLE, M.A., Lecturer in Industrial Education.
RALPH ZIRKIND, M.S., Assistant Instructor of Physics.

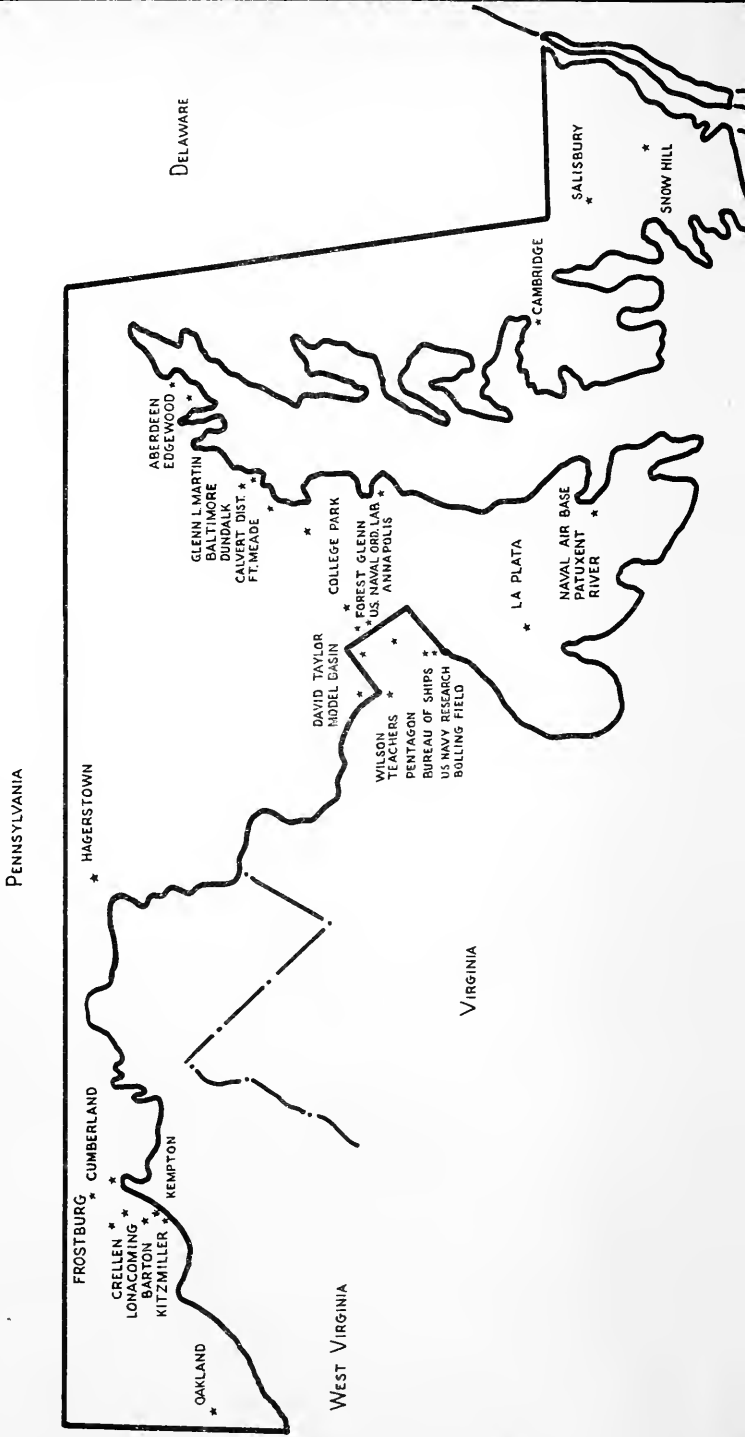


Rossborough Inn
The oldest building on the Maryland Campus

OFF CAMPUS CENTERS

UNIVERSITY OF MARYLAND

COLLEGE OF SPECIAL & CONTINUATION STUDIES



SECTION I

GENERAL

For some years employed men and women have asked for educational service on a part-time basis from their state university. In response to these requests, individual colleges undertook to provide class work off-campus in the evening hours in government agencies, industrial establishments, and university and public buildings.

It was the consensus of deans and other administrative officers that a single administrative unit prepared to handle all types of requests might provide a more comprehensive program and at the same time avoid duplication among colleges. On recommendation of the Administrative Board and the President of the University, the Board of Regents established in July, 1947, the College of Special and Continuation Studies.*

This College is charged with the responsibility of administering all off-campus instruction for part-time students, except that already adequately organized through agricultural extension.

There is also maintained a Division of General Studies, which is the on-campus branch of the College of Special and Continuation Studies.

DIVISION OF GENERAL STUDIES

The General Studies Division admits students who wish to pursue special curricula and students who wish to enter one of the other colleges but do not meet one or more of the special requirements of the University.

These special students pursue regular University courses in combinations which are especially adapted to their own requirements but which may not meet the specific requirements of any authorized curriculum.

The remaining students who may wish to enter other colleges but do not satisfy the specific requirements are provided special study supervision and vocational and educational guidance. Effective study techniques are taught and individual assistance in English, science, mathematics, and the social sciences is given in one-hour conferences adjusted to the needs of the students.

ESTABLISHMENT OF OFF-CAMPUS CENTERS

The College is prepared to establish credit courses and institutes, and non-credit short courses for groups of adults who are qualified to do university work and who need assistance on a part-time basis. If facilities permit and demand is sufficient, courses or institutes may be set up in any community requesting this service.

* Main Office: University of Maryland, College Park. Warfield 3800, extension 425.

Branch Office: Administration Building, University of Maryland, Lombard and Greene Streets, Baltimore. PLaza 1100, extension 48.

The readiness of officials of the College of Special and Continuation Studies to meet all requests for off-campus courses is limited however by three factors. In order to assure the same instruction as that given on the campus and to protect the students' credit, officials prefer to call on regular university staff for the courses. With increased enrollments in full-time college programs, staff members are occasionally not free for off-campus assignments.

A second limiting factor is the type of service requested. Certain courses can be given only where there are adequate reference library materials or laboratories, or when students are free to give considerable time to their studies. Requests for selected courses may therefore be refused if in the judgment of department heads such courses cannot be successfully conducted off-campus.

A third limiting factor is student enrollment. The Director reserves the right to cancel a course for which there is insufficient enrollment.

TYPES OF COURSES AND INSTITUTES

The College of Special and Continuation Studies offered during the 1948-1949 school term a total of 413 courses for university credit. While credit courses comprise the largest proportion of off-campus offerings of the College, certificate programs, in-service training programs, and current affairs institutes have and will be given wherever there is need for study series of these types.

Credit Courses

At present the College of Special and Continuation Studies is offering primarily credit courses in the social and natural sciences, the humanities, mathematics, engineering, and education. There are limited offerings in other technical courses.

In off-campus centers, such as Baltimore and Army and Navy establishments, it is planned to develop sequences of courses which will be offered over a several year period. Students working for degrees can therefore anticipate what courses may be secured through the off-campus program.

There will be little attempt, however, to provide on a part-time basis a complete sequence of courses leading to any one degree. Off-campus credit courses are a special service to those adults who because of employment are temporarily prevented from attending college full-time during the day. Those adults who plan to pursue work toward degrees should also plan for periods of full-time work on the College Park or Baltimore campuses during the summer or during the regular academic year.

Certificate Programs

Single courses leading to a certificate may be set up where residence credit cannot be offered or where university credit is not desired. The College of Special and Continuation Studies will also arrange series of credit or non-credit courses in a given field leading to a certificate.

In the past, in cooperation with the College of Home Economics, a five-month certificate course in principles of nutrition has been given for military personnel at the Food Service School at Fort George G. Meade.

In Baltimore, a series of university credit courses in the fields of labor, industry, commerce, and personnel work will be given over a period of years. Certificates will be issued to students on the completion of the required courses in the series. The purpose of this sequence of courses is to acquaint persons in labor, industrial, and commercial organizations with basic trends in these spheres.

Credit courses in mathematics and electrical engineering, leading to a certificate on completion of the series, are being offered at the United States Naval Air Station at Patuxent River, Maryland.

In-Service Training Programs

In recent years, a number of in-service training programs involving credit or non-credit courses or workshops have been offered in the fields of labor-management, supervisory training, health and welfare, and social service. Among these have been a program for recreation leaders in the Bureau of Recreation, Department of Recreation and Parks, Baltimore, and, in cooperation with the State Bureau of Mines, night mining classes at the mine heads in Garrett and Allegany counties.

At each of its plants throughout the country, the Calvert Distilling Company maintains an in-service training program through cooperation with a nearby university. The University of Maryland gives courses for this program at the Elkridge plant, offering each semester one course related to job training and another which is of general cultural interest.

Courses in aeronautical and mechanical engineering and in mathematics have been given for employees of the Glenn L. Martin Company.

In-service needs of teachers are regularly supplied by this College in cooperation with the College of Education. Graduate and undergraduate level courses are given in any community where a sufficient number of teachers have indicated an interest in a particular course. In addition, the staff of the Institute for Child Study of the College of Education offers a series of courses on human development and on the techniques of child study for members of the educational profession. The sequence of three courses, Child Development Laboratory I, II, and III, involve the direct year-long study of children as individuals and in groups, and is offered to teachers in the field through the College of Special and Continuation Studies. A series of community study courses offered in Baltimore supplement the child development work by presenting the social environment of the child.

College officials are most desirous of cooperating with organizations or groups interested in developing in-service training programs. Inquiries regarding this type program should be addressed to the Director, College of Special and Continuation Studies.

Current Affairs Institutes

Many adults not interested in college credit may still wish to avail themselves of the assistance of the various subject-matter experts which the University has available.

Short courses or institutes in local, national, and international problems may be provided in communities where there is sufficient demand.

SPEAKERS BUREAU

The College maintains a list of professors and instructors who are prepared to give lectures on their specialties to high school and adult groups. When college duties permit, professional staff members are available free of charge for single talks to Maryland groups.

Proposed New Chapel—University of Maryland



SECTION II

UNIVERSITY REGULATIONS REGARDING ADMISSION,
REGISTRATION, WITHDRAWALS, AND FEES

CREDIT COURSES

Regular Admission

The admission requirements for those part-time students who desire to become candidates for degrees are the same as for full-time day students at the University. Before registering, a candidate for a degree must be admitted to the University. For admission to undergraduate colleges, the candidate should write Dr. Edgar F. Long, Director of Admissions, Baltimore or College Park. Those who seek graduate degrees should write Dr. Ronald Bamford, Acting Dean of the Graduate School, College Park.

Probationary Admission

Students who are taking work for transmittal to other colleges and universities, or who are not sure that they wish to matriculate for degrees, may be admitted to the University on a provisional basis. Matriculation on the basis of this application is an expedient only and for the purpose of facilitating enrollment of part-time students. Students wishing to be admitted to the University of Maryland to work for a degree should make application for admission to the regular authorities as early as possible.

Classification of Students

Regular Students. Students who prior to their registration for work in the College of Special and Continuation Studies have been admitted to degree granting colleges will be considered as students in good standing subject only to academic regulations of the University.

Special Students. Applicants who are at least twenty-one years of age, and who have not completed the usual preparatory course, may be admitted to such courses as they seem fitted to take. *Special students are ineligible to matriculate for a degree until entrance requirements have been satisfied.*

Unclassified Students. Applicants who meet entrance requirements but who do not wish to pursue a program of study leading to a degree are eligible for provisional admission as mentioned above. They may pursue courses for which they have met prerequisites.

Guidance in Registration

The student who wishes to pursue work towards a degree in a program administered by the College of Special and Continuation Studies must secure guidance and permission to take off-campus courses from an adviser in the college where he wishes to obtain his degree. Officials of the College

of Special and Continuation Studies will not take responsibility for advising students matriculated in degree granting colleges.

Degrees

Credit courses taken through the College of Special and Continuation Studies may be counted towards any of the degrees granted by the colleges of the University, provided such courses have been approved by appropriate advisers as meeting degree requirements.

Quality of Credit Courses

Both instructors and courses in the College of Special and Continuation Studies are approved by appropriate department heads and deans. Courses carry residence credit and are identical in quality and content with courses given in the day programs of the University. However, students who pursue a large portion of their work off-campus may miss the advantages of continuous guidance and campus contacts with professional staff which are an invaluable part of their college work. Students should be very careful, therefore, to consult with their advisers regarding how much work they may profitably pursue in the part-time off-campus program.

Course Load

A student employed full-time will be limited to six credit hours per semester in off-campus courses, unless he is given permission by his adviser to carry a heavier course load.

NON-CREDIT COURSES AND INSTITUTES

Admission and registration requirements will be adjusted to fit the clientele of each non-credit short course or institute.

FEES

Credit Courses

Matriculation Fee (Payable at once at time of first registration by all students, full-time and part-time; candidates for degrees and non-candidates. Only one matriculation fee need be paid for each degree.)

For Undergraduates	\$10.00
For Graduates	10.00
Tuition Charge (same for all students) per credit hour.....	8.00*

* Part-time graduate students enrolled in the College of Special and Continuation Studies must pay the fee of \$8.00 per semester credit hour even though they may be carrying more than 8 semester credit hours.

Laboratory Fees Per Semester Course

Bacteriology	\$10.00	Education	\$1.00
Botany	5.00	Industrial Education	3.00
Chemical Engineering.....	8.00	Physics—	
Chemistry	10.00	Introductory	3.00
Dairy	3.00	All Other	6.00
Electrical Engineering	4.00	Psychology	4.00
Entomology	3.00	(Psych. 150, 151, 152)	
Home Economics—		Secretarial Training.....	7.50
(Non-Home Students)		Speech—	
Art Textiles and Clothing..	3.00	Radio and Stagecraft.....	2.00
Foods and Practice House		All Other	1.00
(each)	7.00	Zoology	6.00

Miscellaneous Fees and Charges

Late Registration Fee

All students are expected to complete their registration, including the filing of class cards and payment of bills, on the regular registration days. Those who do not complete their registration during the prescribed days will be charged a fee of.....

\$5.00

Fee for Change in Registration..... 3.00

Special Examination Fee—to establish college credit—per semester hour 5.00

Makeup Examination Fee

For students who are absent during any class period when tests or examinations are given.....

1.00

Transcript of Record Fee

No charge is made for first copy

Each additional copy 1.00

Property Damage Charge

Students will be charged for damage to property or equipment. Where responsibility for the damage can be fixed, the individual student will be billed for it; where responsibility cannot be fixed, the cost of repairing the damage or replacing equipment will be pro-rated.

Diploma (undergraduate) 10.00

Payment of Fees

All checks, money orders, or postal notes should be made payable to the University of Maryland.

Non-Credit Short Courses and Institutes

Fees for short courses and institutes will be determined in terms of cost of each such short course or institute.

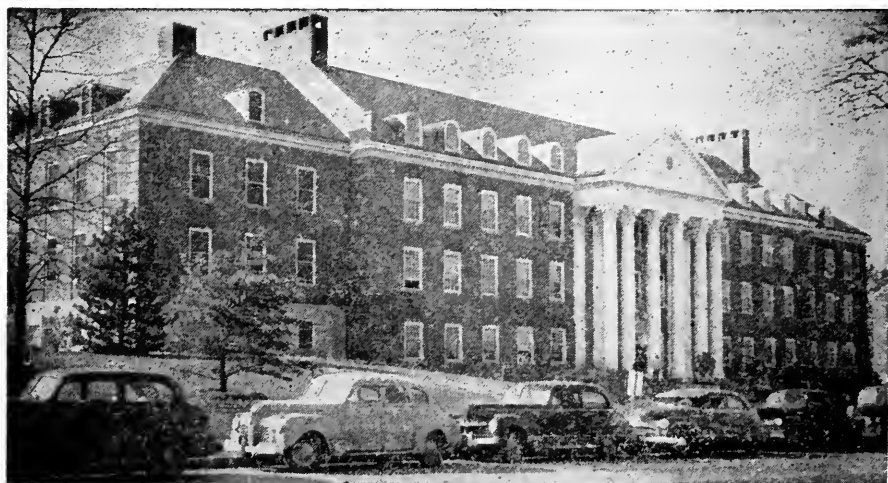
WITHDRAWAL AND REFUND OF FEES

Any student compelled to leave the University at any time during the academic year should file, in person or by letter of request for withdrawal. The Director of the College of Special and Continuation Studies will initiate and sign the necessary withdrawal forms and forward them to the office of the Registrar. If this is not done, the student will not be entitled, as a matter of course, to a certificate of honorable dismissal, and will forfeit his right to any refund to which he would otherwise be entitled. The date used in computing refunds is the date the application for withdrawal is filed in the office of the Registrar.

Students withdrawing from the University will receive a refund of all charges, less the matriculation fee, in accordance with the following schedule:

Period from Date Instruction Begins

2 weeks or less.....	80%
between 2 and 3 weeks.....	60%
between 3 and 4 weeks.....	40%
between 4 and 5 weeks.....	20%
over 5 weeks.....	0



Agriculture Building—University of Maryland

SECTION III

PROPOSED OFFERINGS, 1949-1950

The College of Special and Continuation Studies plans to offer the courses as listed for each center in the 1949-1950 school term. This is a proposed schedule and is subject to change prior to registration according to needs and demands of students.

The student, in planning his program for 1949-1950, should, if he is working towards a degree, consult with the head of the department in which he is studying whenever necessary. He should also take into consideration the course prerequisites, which are given in Section IV, "Course Descriptions."

Calendar for 1949-1950

The Calendar for 1949-1950, College Park, will be followed as closely as possible in the off-campus centers. Classes must meet for sixteen weeks, making a total of 48 class hours for three-credit courses and 32 class hours for two-credit courses.

The holidays shown on the Calendar for 1949-1950, College Park, will be observed in the off-campus centers.

Army and Navy Centers

Centers in the Army and Navy establishments are operated in cooperation with the education and training sections and students in these centers may communicate either with the training officer at the establishment or with this College, for any additional information needed.

ABERDEEN

Courses at Aberdeen are given at the Aberdeen Proving Ground in cooperation with the Army Information and Education Office. The course offerings attempt to meet the needs of the Aberdeen-Edgewood population. (Consult page ? ? ? for Edgewood courses.)

Proposed Program, 1949-1950

Fall, 1949-1950—Registration, September 16, 1949

- Eng. B3. Composition and World Literature (3).
- French B1. Elementary French (3).
- H. B5. History of American Civilization (3).
- Math. B17a. Analytic Geometry (2).
- M. S. B151. Military Logistics (3).
- Psych. B161. Psychological Techniques of Personnel Administration (3).
- Soc. B115. Industrial Sociology (3).
- Speech B103. Speech Composition and Rhetoric (3).

Spring, 1950—Registration, February 3, 1950

- Econ. B160. Labor Economics (3).
 Eng. B4. Composition and World Literature (3).
 French B2. Elementary French (3).
 H. B6. History of American Civilization (3).
 Math. B17b. Analytic Geometry (2).
 M. S. B153. Military Policy of the United States (3).
 Speech B104. Speech Composition and Rhetoric (3).

ANNAPOLIS

The courses at Annapolis are offered in conjunction with the Post-graduate School of the United States Naval Academy.

Proposed Program, 1949-1950

Fall, 1949-1950—Registration, September 19, 1949

- Chem. B5. Introductory Qualitative Analysis (3).
 Dr. B1. Engineering Drawing (2).
 Eng. B1. Composition and American Literature (3).
 Eng. B7. Technical Writing (2).
 H. B186. History of the British Empire: The Commonwealth (3).
 Math. B17a. Analytic Geometry (2).
 Math. B116. Introduction to Complex Variable Theory (3).
 Phys. B1. Elements of Physics: Mechanics, Heat and Sound (3).
 Phys. B212. Introduction to Quantum Mechanics (2).

Spring, 1950—Registration, February 6, 1950

- Chem. B19. Quantitative Analysis.
 Dr. B2. Engineering Drawing (2).
 Eng. B2. Composition and American Literature (3).
 H. B191. History of Russia (3).
 Math. B17b. Analytic Geometry (2).
 Math. B139. Operational Calculus (3).
 Phys. B2. Elements of Physics: Magnetism, Electricity and Optics (3).
 Phys. B213. Introduction to Quantum Mechanics (2).
 S. T. B1. Principles of Typewriting (2).

BALTIMORE

A branch office of the College of Special and Continuation Studies is maintained in the Administration Building, University of Maryland, Baltimore, to serve as headquarters for the largest permanent center of the College.

During the academic year 1948-1949 over fifteen hundred students coming from Baltimore City and surrounding counties were enrolled in some 100 different courses. Students are currently working on degrees in several undergraduate colleges and in the Graduate School of the University.

Special Course Sequences

Although this center is maintained to serve all types of students, special course sequences in chemistry and various phases of education have been included in the schedule at the request of certain groups.

Chemistry

To accommodate men from industry and government agencies who are interested in work toward a master's degree in chemistry, a sequence of courses was worked out for three academic years, in cooperation with the Department of Chemistry.

Academic Year, 1948-1949

Chem. 201, 203. The Chemistry of Rarer Elements (2, 2).

Chem. 285. Colloid Chemistry (2).

Phys. 208, 209. Thermodynamics (2, 2).

Academic Year, 1949-1950

Chem. 142, 144. Advanced Organic Laboratory (2, 2).

Chem. 146, 148. The Identification of Organic Compounds (2, 2).

Chem. 261, 263. Advanced Biochemistry (2, 2).

Phys. 112, 113. Modern Physics (2, 2).

Academic Year, 1950-1951

Chem. 35, 37. Elementary Organic Chemistry (2, 2) (Undergrad. credit only).

Chem. 36, 38. Elementary Organic Laboratory (2, 2) (Undergrad. credit only).

Chem. 141, 143. Advanced Organic Chemistry (2, 2).

Phar. Chem. 201, 203. Survey (2, 2).

Phar. Chem. 211, 213. Alkaloids (2, 2).

In addition, there will be made available pertinent and supplementary courses in scientific French and German, physics, mathematics, and such general fields as history of science.

Education

The College of Education has for some years been active in promoting courses for educators in Baltimore. Although the Baltimore program is now being administered by the College of Special and Continuation Studies, officials of the College of Education are continuing to give active assistance and guidance in promoting a steadily expanding offering for teachers and school officials in Baltimore city and county, and in surrounding counties.

Industrial Education

With the advice of the Head of the Department of Industrial Education, the College of Special and Continuation Studies will offer over a two-year

period, if demand warrants, a complete sequence of courses required by the Baltimore Department of Education to qualify vocational, occupational, and shop center teachers for appointment.

Each year there will be different offerings in shop subjects and in graduate courses in vocational education and industrial arts education.

Elementary and Secondary School Education

Since January, 1948, officials of universities in the metropolitan area, of Baltimore city and county schools, and of the State Department of Education have been holding conferences to plan in-service programs for city and county teachers and administrators. University representatives have included members of education and off-campus staffs of New York University, Johns Hopkins University, Loyola College, Western Maryland College, Towson State Teachers College, and the University of Maryland.

With the advice of the Dean, College of Education, the College of Special and Continuation Studies plans to offer such credit courses as will supplement and enrich the regular professional growth programs of the schools. There will be offered a four- or five-year sequence of courses which teachers may use for credit toward bachelor's degrees in elementary education and master's degrees in education. These courses will lie in the general areas of community and child study and a variety of educational activities related to improved core teaching.

Child Study

The staff of the Institute for Child Study, College of Education, will offer a series of courses on human development and on the techniques of child study for members of the educational profession. The sequences of three courses called Child Development Laboratory I, II, and III, which involve the direct year-long study of children as individuals and in groups, will be offered to teachers in the field through the College of Special and Continuation Studies.

Nursing Education

With the advice of the Director of the School of Nursing, the College of Education has approved a limited number of courses in nursing education to be given in Baltimore in the late afternoons and evenings. These are planned for registered nurses who are working for bachelor's degrees in nursing education or for master's degrees in education. Candidates in nursing education are also eligible for registration in regular education and arts and science courses.

Industrial Safety Engineering

A standard course in industrial safety engineering was offered at the Baltimore Center. This course is given at the request of the Baltimore Safety Council, which assists with arrangements and publicity concerning the course.

Proposed Program, 1949-1950

Fall, 1949-1950—Registration, September 20-24, 1949

- B. A. B144. Life, Group, and Social Insurance (2).
B. A. B162. Contemporary Trends in Labor Relations (3).
B. A. B169. Industrial Management (3).
B. ED. Work-Experience Course (2) (to be announced).
Chem. B142. Advanced Organic Laboratory (2).
Chem. B146. The Identification of Organic Compounds (2).
Chem. B261. Advanced Biochemistry (2).
Econ. B31. Principles of Economics (3).
Econ. B131. Comparative Economic Systems (3).
Ed. B102. History of Education in the United States (2).
Ed. B130. Theory of the Junior High School (2).
Ed. B144. Materials and Procedure for the Junior High School Core Curriculum (2).
Ed. B151. Remedial Reading Instruction (2).
Ed. B162. Mental Hygiene in the Classroom (2).
Ed. B163, 164, 165. Community Study Laboratory I, II and II (2, 2, 2) (full year).
Ed. B210. The Organization and Administration of Public Education (2).
Ed. B219. Seminar in School Administration (2).
Ed. B250. Analysis of the Individual (2).
Eng. B1, 2. Composition and American Literature (3, 3).
Eng. B3, 4. Composition and World Literature (3, 3).
Eng. B140. The English Novel: Victorian Period (3).
French B1. Elementary French (3).
Geog. B130. Economic and Political Geography of Southern and Eastern Asia (3).
G. & P. B1. American Government (3).
G. & P. B110. Principles of Public Administration (3).
H. B5. History of American Civilization (3).
H. B141. History of Maryland (3).
H. B191. History of Russia (3).
H. D. Ed. B102, 103, 104. Child Development Laboratory I, II, and III (2, 2, 2) (full year).
H. D. Ed. Course in the 200 series to be announced (full year).
Ind. Ed. B10. Art Crafts II (2).
Ind. Ed. B108. Electricity III (2).
Ind. Ed. B150. Teaching Aids Development (2).
Math. B154. Application of Statistics (2).
N. Ed. B115. Ward Management and Clinical Teaching (2).
P. E. B140. Therapeutics (3).
P. E. B190. Organization and Supervision of Physical Education, Health and Recreation (3).
Phys. B1. Elements of Physics (3).
Phys. B112. Modern Physics (2).

- Psych. B1. Introduction to Psychology (3).
 Pysch. B110a. Educational Psychology (3).
 Soc. B1. Sociology of American Life (3).
 Soc. B118. Community Organization (3).
 Speech B1. Public Speaking (2).
 Speech B105. Speech Pathology (3).
 Zool. B1a. General Zoology (2).

Spring, 1950—Registration, February 7-11, 1950

- B. A. B164. Recent Labor Legislation and Court Decisions (3).
 B. A. B167. Job Evaluation and Merit Rating (2).
 B. Ed. Work-Experience Course (to be announced) (2).
 Chem. B144. Advanced Organic Laboratory (2).
 Chem. B148. The Identification of Organic Compounds (2).
 Chem. B262. Advanced Biochemistry (2).
 Econ. B32. Principles of Economics (3).
 Econ. B134. Contemporary Economic Thought (3).
 Ed. B131. Theory of the Senior High School (2).
 Ed. B160. Educational Sociology (2).
 Ed. B203. Problems in Higher Education (2).
 Ed. B223. Practicum in Personnel Administration (2-6).
 Ed. B225. School Public Relations (2).
 Ed. B269. Seminar in Guidance (2).
 Eng. B1, 2. Composition and American Literature (3, 3).
 Eng. B3, 4. Composition and World Literature (3, 3).
 Eng. 145. The Modern Novel (3).
 French B2. Elementary French (3).
 Geog. B131. Economic and Political Geography of Southern and Eastern Asia (3).
 G. & P. B1. American Government (3).
 G. & P. B142. Recent Political Theory (3).
 H. B6. History of American Civilization (3).
 H. B142. History of Maryland (3).
 H. B193. History of the Near East (3).
 Ind. Ed. B164. Shop Organization and Management (2).
 Ind. Ed. B168. Trade or Occupational Analysis (2).
 Ind. Ed. B216. Supervision of Industrial Arts (2).
 Math. B155. Application of Statistics (2).
 N. Ed. B116. Ward Management and Clinical Teaching (2).
 P. E. B150. History and Philosophy of Physical Education (2).
 Phys. B2. Elements of Physics (3).
 Phys. B113. Modern Physics (2).
 Psych. B2. Applied Psychology (3).
 Soc. B1. Sociology of American Life (3).
 Soc. B123. Ethnic Minorities (3).
 Speech B2. Public Speaking (2).
 Zool. B1b. General Zoology (2).

BOLLING AIR FORCE BASE

The Bolling Field Center is operated in cooperation with the Troop Information and Education Office there.

Proposed Program, 1949-1950

Summer, 1949—Registration May 31, 10:00 a. m. to 6:00 p. m.

Classes Begin June 6, End July 30

- French 2. Elementary French (3).
- Spanish 2. Elementary Spanish (3).
- G. & P. 106. American Foreign Relations (3).
- H. 6. History of American Civilization (3).
- Math. 11. Trigonometry and Analytic Geometry (3). (To be given at The Pentagon.)
- M. S. 151. Military Logistics (3).
- Speech 103. Speech Composition and Rhetoric (2).

Fall, 1949-1950—Registration, September 12, 1949

- Spanish 4. Intermediate Spanish (3).
- G. & P. 101. International Political Relations (3).
- H. 5. History of American Civilization (3).
- H. 175. Europe in the World Setting of the Twentieth Century (3).
- Math. 10. Algebra (3).
- Soc. 144. Collective Behavior (3).
- Speech 103. Speech Composition and Rhetoric (2).

Spring, 1950—Registration, January 30, 1950

- Spanish 5. Intermediate Spanish (3).
- G. & P. 154. Problems of World Politics (3).
- H. 6. History of American Civilization (3).
- H. 176. Europe in the World Setting of the Twentieth Century (3).
- Math. 11. Trigonometry and Analytic Geometry (3).
- M. S. 153. Military Policy of the United States (3).
- Speech 104. Speech Composition and Rhetoric (2).

BUREAU OF SHIPS—DEPARTMENT OF THE NAVY

The program here is designed for Navy scientists wishing to do advanced work in engineering, physics, and mathematics, and is offered in cooperation with training divisions in the Navy bureaus.

Proposed Program, 1949-1950

Fall Registration, Week of September 12, 1949

Spring Registration, Week of January 30, 1950

- E. E. 200. Symmetrical Components (3).
- E. E. 201. Electromagnetic Theory (3).

PROPOSED OFFERINGS

- E. E. 206, 207. Ultra-High-Frequency Techniques (3, 3).
 Math. 132, 133. Advanced Mathematics for Engineers and Physicists
 (3, 3).
 M. E. 200. Advanced Dynamics (3).
 Phys. 106, 107. Theoretical Mechanics (3, 3).
 Phys. 208, 209. Thermodynamics (2, 2).
 Phys. 212, 213. Introduction to Quantum Mechanics (2, 2).

CALVERT DISTILLING COMPANY

Proposed Program, 1949-1950

Summer, 1949

- B. A. B20. Principles of Accounting (4).
 B. A. B140. Financial Management (3).

Fall, 1949-1950—Registration, Week of September 12, 1949

- Bact. B1. General Bacteriology (4).
 Econ. B150. Marketing Principles and Organization (3).

Spring, 1950—Registration, Week of January 30, 1950.

- Art B9. Historical Survey of Painting, Sculpture and Architecture (3).
 B. A. B130. Elements of Business Statistics (2).
 Speech B1. Public Speaking (2).

CAMBRIDGE

Proposed Program, 1949-1950

Fall Registration, September 17, 1949

Spring Registration, February 4, 1950

- Speech 105. Pathology (3). (First semester.)
 Speech 106. Clinic (3). (Second semester.)

CUMBERLAND

Proposed Program, 1949-1950

Fall, 1949-1950—Registration, First Class Meeting

- Ed. 110. The Teacher and School Administration (2).
 Ed. 126. The Elementary School Curriculum (2).

Spring, 1950—Registration, First Class Meeting

- Ed. 102. History of Education in the United States (2).
 Ed. 106. Comparative Education—Latin American (2).

DAVID TAYLOR MODEL BASIN

The courses offered at this Center are primarily advanced engineering, mathematics, and physics courses. The program is operated in conjunction with the Education Committee of the Model Basin.

Proposed Program, 1949-1950

Fall Registration, Week of September 12, 1949

Spring Registration, Week of January 30, 1950

Math. 132, 133. Advanced Mathematics for Engineers and Physicists (3, 3).

Physics 104, 105. Electricity and Magnetism (3, 3).

EDGEWOOD

The program at Edgewood is given in cooperation with the Troop Information and Education Office of the Army Chemical Center, and attempts to meet the needs of the Edgewood-Aberdeen area. (Consult page — for Aberdeen courses.)

Proposed Program, 1949-1950

Summer, 1949

H. B6. History of American Civilization (3).

Psych. B1. Introduction to Psychology (3).

Fall, 1949-1950—Registration, September 15, 1949

B. A. B160. Personnel Management (3).

Econ. B37. Fundamentals of Economics (3).

Eng. B1. Composition and American Literature (3).

Math. B10. Algebra (3).

Spring, 1950—Registration, February 2, 1950

B. A. B169. Industrial Management (3).

Eng. B2. Composition and American Literature (3).

Math. B11. Trigonometry and Analytic Geometry (3).

Soc. B1. Sociology of American Life (3).

FOREST GLEN

SPEECH PROGRAM FOR GRADUATE STUDENTS

A reciprocal agreement exists between the Department of Speech and Dramatic Art, University of Maryland, College Park, and the Army Audiology and Speech Correction Center of the Walter Reed General Hospital, Forest Glen, Maryland, whereby graduate credit will be granted by the University of Maryland for the successful completion of the courses listed below. Students desiring credit for the courses will follow the usual registration procedure in effect at the University and will register in the College of Special and Continuation Studies. The Dean of the Graduate School will accept candidates for the M.A. degree in Speech subject to the approval of the Speech Department. Any credits earned in the courses listed below will carry full graduate credit and may be transferred to other schools for credit toward the M.A. or Ph.D. degree.

PROPOSED OFFERINGS

- Speech 200. Thesis (3-6).
- Speech 201. Special Problems (2-4).
- Speech 210. Anatomy and Physiology of Speech and Hearing (3).
- Speech 211. Advanced Clinical Practice (3).
- Speech 212. Advanced Speech Pathology (3).
- Speech 213. Speech Problems of the Hard of Hearing (3).
- Speech 214. Clinical Audiometry (3).
- Speech 215. Auditory Training (3).
- Speech 216. Speech Reading (3).
- Speech 217. Clinical Practice in the Selection of Hearing Aids (3).
- Speech 218. Problems of Hearing and Deafness (3).

Proposed Program, 1949-1950**Fall, 1949-1950**

- Speech 200. Thesis
- Speech 201. Special Problems.
- Speech 213. Speech Problems of the Hard of Hearing.
- Speech 214. Clinical Audiometry.
- Speech 216. Speech Reading.

Spring, 1950

- Speech 200. Thesis
- Speech 201. Special Problems.
- Speech 212. Advanced Speech Pathology.
- Speech 215. Auditory Training.
- Speech 217. Clinical Practice in the Selection of Prosthetic Appliances.

FORT GEORGE G. MEADE

Courses are given at Fort Meade in cooperation with the Troop Information and Education Office at the post.

Summer, 1949

- B. A. 160. Personnel Management (3).
- Econ. 37. Fundamentals of Economics (3).
- H. 6. History of American Civilization (3).
- Math. 0. Basic Mathematics (0).

Fall, 1949-1950—Registration, Week of September 12, 1949

- Spanish 1. Elementary Spanish (3).
- G. & P. 106. American Foreign Relations (3).
- Math. 10. Algebra (3).
- M. S. 151. Military Logistics (3).
- Psych. 121. Social Psychology (2).

Spring, 1950—Registration, Week of January 30, 1950

- B. A. 179. Problems in Supervision (3).
- Spanish 2. Elementary Spanish (3).
- Geol. 2. Engineering Geology (2).
- G. & P. 154. Problems of World Politics (3).
- Math. 11. Trigonometry and Analytic Geometry (3).
- Soc. 115. Industrial Sociology (3).

GARRETT AND ALLEGANY COUNTIES, NIGHT MINING CLASSES

It is planned to continue the offering of night mining classes in various localities in Garrett and Allegany Counties in 1949-1950, in cooperation with the State Bureau of Mines.

HAGERSTOWN

Proposed Program, 1949-1950

Fall, 1949-1950—Registration, First Class Meeting

- Psych. 110. Educational Psychology (2).

Spring, 1950—Registration, First Class Meeting

- Ed. 215. Public Education in Maryland (2).

LA PLATA

Proposed Program, 1949-1950

Fall, 1949-1950—Registration, First Class Meeting

- Ed. 160. Educational Sociology—Introductory (2).

Spring, 1950—Registration, First Class Meeting

- H. 129. The United States and World Affairs (3).

THE PENTAGON

The Pentagon Center is operated in cooperation with the Army and Army Air Force, Military District of Washington. Further information is available from either the Information and Education Branch in The Pentagon or this College.

Proposed Program, 1949-1950

Summer, 1949—Registration, June 1 and 2, 10:00 a. m. to 6:00 p. m.

Classes Begin June 6, End July 30

- B. A. 160. Personnel Management (3).
- B. A. 180. Business Law (4).
- Econ. 37. Fundamentals of Economics (3).
- G. & P. 101. International Political Relations (3).
- H. 5. History of American Civilization (3).
- H. 195. The Far East (3).

- Math. 11. Trigonometry and Analytic Geometry (3).
 Psych. 161. Psychological Techniques in Personnel Administration (2).
 Soc. 114. The City (3).
 Speech 101. Radio Speech (3).
 Speech 102. Radio Production (3).
 Speech 103, 104. Speech Composition and Rhetoric (2, 2).

Fall, 1949-1950—Registration, September 13-14, 1949

- B. A. 179. Problems in Supervision (4).
 B. A. 181. Business Law (4).
 Dr. 1. Engineering Drawing (2). (On Campus.)
 Eng. 3. Composition and World Literature (3).
 French 1. Elementary French (3).
 French 4. Intermediate Literary French (3).
 Spanish 4. Intermediate Spanish (3).
 Geog. 100. Regional Geography of the United States and Canada (3).
 G. & P. 106. American Foreign Relations (3).
 G. & P. 110. Public Administration (3).
 H. 5, 6. History of American Civilization (3, 3).
 H. 135. Constitutional History of the United States (3).
 H. 145. Latin-American History (3).
 Math. 0. Basic Mathematics (0).
 Math. 10. Algebra (3).
 M. S. 153. Military Policy of the United States (3).
 Soc. 52. Criminology (3).
 Speech 101. Radio Speech (3).
 Speech 103, 104. Speech Composition and Rhetoric (2, 2).
 Surv. 1. Plane Surveying (2).

Spring, 1950—Registration, January 31 and February 1, 1950

- Agr. Eng. 102. Gas Engines, Tractors and Automobiles (3). (On Campus.)
 B. A. 160. Personnel Management (3).
 Eng. 4. Composition and World Literature (3).
 French 2. Elementary French (3).
 French 5. Intermediate Literary French (3).
 Spanish 5. Intermediate Spanish (3).
 G. & P. 101. International Political Relations (3).
 G. & P. 102. International Law (3).
 H. 6. History of American Civilization (3).
 H. 108. Social and Economic History of the United States Since 1900 (3).
 H. 146. Latin-American History (3).
 Math. 10. Algebra (3).
 Math. 11. Trigonometry and Analytic Geometry (3).
 M. S. 151. Military Logistics (3).
 Soc. 121. Population (3).

- Soc. 147. Sociology of Law (3).
 Speech 101. Radio Speech (3).
 Speech 103, 104. Speech Composition and Rhetoric (2, 2).
 Surv. 2. Plane Surveying (2).

UNITED STATES NAVAL AIR BASE, PATUXENT RIVER

Course sequences in mathematics and electrical, mechanical, and aeronautical engineering for both undergraduates and graduate students have been planned to cover approximately a three-year period. The sequences are shown below.

Undergraduates

- Math. 19. Mathematics Refresher (0). Spring and Summer, 1949
 Math. 20, 21. Calculus (4, 2). Summer and Fall, 1949; Spring, 1950
 E. E. 100. Alternating Current Circuits (6). Summer, 1950
 E. E. 101. Engineering Electronics (3, 2). Fall, 1950; Spring, 1951
 Math. 64. Differential Equations (3). Summer, 1951

For Graduates in Electrical Engineering

- E. E. 104. Communication Circuits (3). Summer, 1948
 E. E. 108. Electric Transients (3). Fall, 1948
 E. E. 120. Electromagnetic Waves (3). Spring, 1949
 E. E. 204, 205. Advanced Circuit Analysis (3, 3). Summer, 1949
 Math. 132, 133. Advanced Mathematics for Engineers and Physicists (3, 3). Spring, 1950

For Graduates in Mechanical Engineering

- Math. 132, 133. Advanced Mathematics for Engineers and Physicists (3, 3). Spring, 1949; Fall, 1949
 Aero. E. 200, 201. Advanced Aerodynamics (3, 3). (To follow Math. 133.)
 M. E. 204, 205. Advanced Thermodynamics (3, 3). (To follow Aero. E. 201.)
 Aero. E. Aircraft Structures (3, 3). (To follow M. E. 205.)

Proposed Program, 1949-1950

Fall Registration, Week of September 12, 1949

Spring Registration, Week of January 30, 1949

- Aero. E. 200, 201. Advanced Aerodynamics (3, 3).
 Math. 20, 21. Calculus (2, 2).
 Math. 132, 133. Advanced Mathematics for Engineers and Physicists (3, 3).

UNITED STATES NAVAL ORDNANCE LABORATORY

The Center at the Naval Ordnance Laboratory is set up for Navy Department personnel in the Washington area. For the most part, courses at

this Center are of Graduate level. Additional information is available through the Coordinator of Training Activities, whose office is at N. O. L., or this College.

Proposed Program, 1949-1950

Fall Registration, Week of September 12, 1949

Spring Registration, Week of January 30, 1949

- E. E. 120. Electromagnetic Waves (3).
- E. E. 201. Electromagnetic Theory (3).
- E. E. 202, 203. Transients in Linear Systems (3, 3).
- Math. 110, 111. Advanced Calculus (3, 3).
- Math. 114. Differential Equations (3).
- Math. 117. Fourier Series (3).
- Math. 134. Vector Analysis (3).
- Phys. 104, 105. Electricity and Magnetism (4, 2).
- Phys. 200, 201. Introduction to Theoretical Physics (5, 5).
- Phys. 204. Electrodynamics (4).
- Phys. 224, 225. Supersonic Aerodynamics and Compressible Flow (2, 2).
- Psy. 240, 241. Theory of Sound and Vibrations (2, 2).

UNITED STATES NAVAL RESEARCH LABORATORY

Courses under this program are designed primarily for Navy scientists doing graduate study in the fields of chemistry, engineering, mathematics, and physics, and are given in cooperation with the training division of the Naval Research Laboratory.

Proposed Program, 1949-1950

Fall, 1949-1950—Registration, Week of September 12, 1949

- Chem. 205. Radiochemistry (2).
- Chem. 239. Physical Techniques in Chemistry (2).
- E. E. 100a. Alternating Current Circuits (3).
- E. E. 101a. Electronics (4).
- (Or Phys. 105.)
- E. E. 201. Electromagnetic Theory (3).
- E. E. 202. Operational Circuit Analysis (3).
- E. E. 220. Electrical Engineering Research (Credit according to work done).
- Eng. 1. Composition and American Literature (3).
- G. & P. 1. American Government (3).
- Math. 114. Differential Equations (3).
- Math. 132. Advanced Mathematics for Engineers and Physicists (3).
- Math. 210. Functions of a Complex Variable (3).
- Math. 230. Applied Mathematics (3).
- (Or Mathematical Physics under the Physics Department.)
- M. E. 200. Advanced Dynamics (3).
- M. E. 202. Applied Elasticity (3).

- Phys. 20. General Physics: Mechanics and Heat (5).
- Phys. 100. Advanced Experiments.
- Phys. 102. Optics (3).
- Phys. 105. Vacuum Tubes (4).
- Phys. 106. Theoretical Mechanics (3).
- Phys. 120. Experimental Nuclear Physics (3).
- Phys. 200. Theoretical Physics (5).
- Phys. 212. Introduction to Quantum Mechanics (2).
- Phys. 228. The Electron (3).
- Phys. 230. Seminar (1).
- Phys. 236. Theory of Relativity (3).
- Phys. 242. Theory of Solids (2).
- Phys. 250. Research (Credit according to work done).

Spring, 1950—Registration Week of January 30, 1950

- Chem. 101. Advanced Inorganic Chemistry (2).
- Chem. 303. Electrochemistry (3).
- E. E. 100b. Alternating Current Circuits (4).
- E. E. 114. Applied Electronics (4).
(Or Phys. 108.)
- E. E. 203. Operational Circuit Analysis (3).
- E. E. 206. Ultra High Frequency Techniques (4).
- E. E. 220. Electrical Engineering Research (Credit according to work done).
- E. E. 235. Tensor Analysis (3).
(Or Math. 227.)
- Eng. 2. Composition and American Literature (3).
- Math. 103. Introduction to Modern Algebra (3).
- Math. 133. Advanced Mathematics for Engineers and Physicists (3).
- Math. 134. Vector Analysis (3).
- Math. 211. Functions of a Complex Variable (3).
- Math. 22F. Tensor Analysis (3).
(Or E. E. 235.)
- Math. 231. Applied Mathematics (3).
(Or Mathematical Physics under Physics Department.)
- M. E. 201. Advanced Dynamics (3).
- M. E. 203. Applied Elasticity (3).
- Phys. 21. General Physics: Sound, Optics, Magnetism and Electricity (5).
- Phys. 100. Advanced Experiments.
- Phys. 107. Theoretical Mechanics (3).
- Phys. 121. Experimental Nuclear Physics (3).
- Phys. 201. Theoretical Physics (5).
- Phys. 204. Electrodynamics (4).
- Phys. 206. Physical Optics (3).
- Phys. 213. Introduction to Quantum Mechanics (2).
- Phys. 229. The Electron (3).

- Phys. 230. Seminar (1).
 Phys. 238. Quantum Theory—Selected Topics (3).
 Phys. 243. Theory of Solids (2).
 Phys. 250. Research (Credit according to work done).
 Speech 7. Public Speaking (2).

WILSON TEACHERS COLLEGE

With the permission of officials of the Public School System of the District of Columbia, courses in geography and kindergarten education will be held at Wilson Teachers College. Registration for both groups of students will be held concurrently, in the fall on September 22, 1949, and in the spring, on February 7, 1950.

Geography—Proposed Program, 1949-1950

Fall, 1949-1950

- Geog. 30. Principles of Physical Geography (3).
 Geog. 90. Problems of Cartographic Procedure (3).
 Geog. 150. Problems of Map Evaluation I (3). (Library of Congress.)
 Geog. 154. Elementary Toponymy (3). (Fall or spring, 1949-1950.)

Spring, 1950—Registration, Week of February 7, 1950

- Geog. 31. Problems of Cartographic Representation (3).
 Geog. 151. Problems of Map Evaluation II (3). (Library of Congress.)
 Geog. 210. Seminar in Cartography (Credit to be arranged). (On Campus.)

Kindergarten Education—Proposed Program, 1949-1950

Fall, 1949-1950

- C. Ed. 110. Child Development Laboratory IV (2).
 C. Ed. 116. Creative Expression through Music (2).

Spring, 1950

- C. Ed. 117. Creative Expression through Art and Literature (2).
 C. Ed. 162. The Child in the Home and School (2).

SECTION IV

COURSE DESCRIPTIONS

Below are listed by departments or special units, the courses to be offered in the academic year 1949-1950 through the College of Special and Continuation Studies.

Credit courses are from the regular listings in the 1949-1950 General Catalog of the University.

Courses are designated by numbers as follows:

1 to 99: Courses for undergraduates.

100 to 199: Courses for advanced undergraduates and graduates. (Not all courses numbered 100 to 199 may be taken for graduate credit.)

200 to 299: Courses for graduates only.

A course with a single number extends through one semester. A course with a double number extends through two semesters.

Courses not otherwise designated are lecture courses. The number of hours' credit is shown by the arabic numeral in parentheses after the title of the course.

A separate schedule of courses is issued each semester, giving the hours, places of meeting, and other information required by the student in making out his program. Students obtain these schedules when they register or through prior request to the office of the College of Special and Continuation Studies.

AERONAUTICAL ENGINEERING

Aero. E. 200, 201. Advanced Aerodynamics (3, 3). Prerequisites, Aero. E. 101, 102, Math. 64.

Special problems in performance and stability of aircraft. Design of aircraft for speeds approaching the velocity of sound. Wind tunnel research.

AGRICULTURAL ENGINEERING

Agr. Engr. 102. Gas Engines, Tractors and Automobiles (3).

A study of the design, operation, and repair of the internal combustion engines, tractors, and automobiles used in farm practice.

ART

Art 9. Historical Survey of Painting, Sculpture and Architecture (3).

An understanding of the epochs in the advance of civilization as expressed through painting, sculpture and architecture. A background to more detailed study.

BACTERIOLOGY**Bact. 1. General Bacteriology (4).**

The physiology, culture and differentiation of bacteria. Fundamental principles of microbiology in relation to man and his environment. Laboratory fee, \$10.00.

BUSINESS ADMINISTRATION

B. A. 20. Principles of Accounting (4). Required in all Business Administration curriculums. Prerequisite, Sophomore standing.

The fundamental principles and problems involved in accounting for proprietorships, corporations and partnerships.

B. A. 130. Elements of Business Statistics (3). Prerequisite, Junior standing. Required for graduation.

This course is devoted to a study of the fundamentals of statistics. Emphasis is placed upon the collection of data; hand and machine tabulation; graphic charting; statistical distribution; averages; index numbers; sampling; elementary tests of reliability; and simple correlations.

B. A. 140. Financial Management (3). Prerequisite, Econ. 140.

This course deals with the principles and practices involved in the organization, financing, and reconstruction of corporations; the various types of securities and their use in raising funds, apportioning income, risk, and control; intercorporate relations; and new developments. Emphasis on solution of problems of financial policy faced by management.

B. A. 144 Life, Group, and Social Insurance (2). Prerequisite, Econ. 32 or 37.

A study of the types of life insurance and the basic principles underlying all life insurance relating to reserves, investments, premiums, and regulations.

B. A. 160. Personnel Management (3). Prerequisite, Econ. 160.

This course deals essentially with functional and administrative relationships between management and the labor force. It comprises a survey of the scientific selection of employees, "in-service" training, job analysis, classification and rating, motivation of employees, employee adjustment, wage incentives, employee discipline and techniques of supervision, and elimination of employment hazards.

B. A. 162. Contemporary Trends in Labor Relations (3). Prerequisite, B. A. 160.

A study of contemporary trends in society's effort through legislation, mediation, and other methods to bring about a harmonious relationship between labor and management. Laws and court decisions affecting labor relations are given some consideration.

B. A. 164. Labor Legislation and Court Decisions (3). Prerequisite, B. A. 160 and senior standing.

B. A. 167. Job Evaluation and Merit Rating (2). Prerequisite, B. A. 160.

The investigation of the leading job evaluation plans used in industry, study of the development and administrative procedures, analyzing jobs and writing job descriptions, setting up a job evaluation plan, and relating job evaluation to pay scales. Study of various employee merit rating programs, the methods of merit rating, and the uses of merit rating.

B. A. 169. Industrial Management (3). Prerequisites, B. A. 11 and 160.

Studies the operation of a manufacturing enterprise. Among the topics covered are product development, plant location, plant layout, production planning and control, methods analysis, time study, job analysis, budgetary control, standard costs, and problems of supervision. An inspection trip to a large manufacturing plant is made at the latter part of the semester.

B. A. 179. Problems in Supervision (3). Prerequisite, B. A. 169.

A case study course of supervisory problems divided into difficulties with subordinates, with associates, and with superiors. The purposes of the course are to apply general principles of industrial management to concrete cases and to extract principles from a study of cases.

B. A. 180, 181. Business Law (4, 4). Prerequisite, senior standing. Required in all Business Administration curriculums.

Legal aspects of business relationships, contracts, negotiable instruments, agency, partnerships, corporations, real and personal property, and sales.

CHEMISTRY

Chem. 5. Introductory Qualitative Analysis (3). Prerequisite, Chem. 3.

Chem. 19. Quantitative Analysis (4). Prerequisites, Chem. 1, 3. Laboratory fee, \$10.00.

Chem. 101. Advanced Inorganic Chemistry (2). Prerequisites, Chem. 23, 37, 38.

Chem. 142, 144. Advanced Organic Laboratory (2, 2). Prerequisites, Chem. 19 or 23, and Chem. 37, 38.

Syntheses and the quantitative determination of carbon and hydrogen, halogen, and nitrogen are studied. Laboratory fee, \$10.00.

Chem. 146, 148. The Identification of Organic Compounds (2, 2). Prerequisites, Chem. 141, 143.

The systematic identification of organic compounds.

Chem. 201, 203. The Chemistry of the Rarer Elements (2, 2). (Offered 1948-1949.)

Chem. 205. Radiochemistry (2).

Chem. 239. Physical Techniques in Chemistry (2).

A survey of the tools available for the solution of chemical problems by means of physical techniques.

Chem. 261. Advanced Biochemistry (2). Prerequisites, Chem. 141, 143, or consent of the instructor.

Chem. 262. Advanced Biochemistry Laboratory (2). Prerequisite, consent of the instructor. Laboratory fee, \$10.00.

Chem. 285. Colloid Chemistry (2).

Chem. 303. Electrochemistry (3).

CHILD DEVELOPMENT

C. Ed. 110. Child Development IV (3). First and second semesters.

A study of the developmental growth of the child from birth to five years; observation in the nursery school. Designed for students in other colleges. Laboratory fee, \$1.00.

C. Ed. 116, 117. Creative Expression; Art, Music, Dance (2-3, 2-3).

Creative experience in the arts on the level of the student; correlation of the arts as related to the abilities of the child in terms of his development.

COLLEGE AIMS

C. A. 1, 2. College Aims (1, 1).

This course is primarily aimed at orienting new students in the College of Special and Continuation Studies toward the practice of efficient study techniques. It will be concerned with such topics as: 1. How to study and develop higher level work skills; 2. Diagnosing and remedying skill disabilities; 3. Handling problem area which distracts students from their studies.

DRAWING

Dr. 1, 2. Engineering Drawing (2, 2). Required of engineering freshmen.

Lettering, use of instruments, orthographic projection, auxiliary views, revolution, sections, pictorial representation, dimensioning, fasteners, technical sketching and working drawings.

ECONOMICS

Econ. 31, 32. Principles of Economics (3, 3). Prerequisite, sophomore standing. Required in the Business Administration Curriculums.

A general analysis of the functioning of the economic system. A considerable portion of the course is devoted to a study of basic concepts and explanatory principles. The remainder deals with the major problems of the economic system.

Econ. 37. Fundamentals of Economics (3). Not open to students who have credit in Econ. 31, and 32. Not open to freshmen.

A survey study of the general principles underlying economic activity. Designed to meet the needs of special technical groups such as students of

Engineering, Home Economics, Agriculture and others who are unable to take the more complete course provided in Economics 31 and 32.

Econ. 131. Comparative Economic Systems (3). Prerequisite, Econ. 32 or 37.

An investigation of the theory and practice of various types of economic systems. The course begins with an examination and evaluation of the capitalistic system, and is followed by an analysis of alternative types of economic systems such as fascism, socialism, and communism.

Econ. 134. Contemporary Economic Thought (3). Prerequisite, Econ. 32.

A survey of recent trends in American, English, and Continental economic thought with special attention being given to the work of such economists as W. C. Mitchell, J. R. Commons, T. Veblen, W. Sombart, J. A. Hobson, and other contributors to the development of economic thought since 1900.

Econ. 150. Marketing Principles and Organization (3). Prerequisite, Econ. 32 or 37.

This is an introductory course in the field of marketing. Its purpose is to give a general understanding and appreciation of the forces operating, institutions employed, and methods followed in marketing agricultural products, natural products, services, and manufactured goods.

Econ. 160. Labor Economics (3). Prerequisite, Econ. 32 or 37.

The historical development and chief characteristics of the American labor movement are first surveyed. Present-day problems are then examined in detail: wage theories, unemployment, social security, labor organization, collective bargaining.

EDUCATION

Ed. 102. History of Education in the United States (2).

A study of the origins and development of the chief features of the present system of education in the United States.

Ed. 106. Comparative Education—Latin American (2).

This course is a continuation of Ed. 105, with emphasis upon the national educational systems of the Western Hemisphere.

Ed. 110. The Teacher and School Administration (2).

This course is designed to acquaint the classroom teacher with the general field of school administration. It considers the relationships of the teacher to the several administrative and supervisory officials and services in the system, with emphasis on the teacher's role in the organization.

Ed. 126. The Elementary School Curriculum (2).

A study of important developments in elementary education with particular attention to methods and materials which may be used to improve the development of pupils in elementary schools. Problems which are encountered in day-to-day teaching situations receive much attention.

***Ed. 130. Theory of the Junior High School (2).**

This course gives a general overview of the junior high school. It includes consideration of the purposes, functions, and characteristics of this school unit; a study of its population, organization, program of studies, methods, staff, and other similar topics, together with their implications for prospective teachers.

***Ed. 131. Theory of the Senior High School (2).**

The secondary school population; the school as an instrument of society; relation of the secondary school to other schools; aims of secondary education; curriculum and methods; extra-curricular activities; guidance and placement; teacher certification and employment in Maryland and the District of Columbia.

Ed. 144. Materials and Procedure for the Junior High School Core Curriculum (2).

This course is designed to bring practical suggestions to teachers who are in charge of core classes in junior high schools. Materials and teaching procedures for specific units of work are stressed.

Ed. 151. Remedial Reading Instruction (2).

Causes for reading disabilities; diagnostic techniques; and corrective methods are studied. Instructional materials are evaluated. The course is designed for both elementary and secondary school teachers.

Ed. 160. Educational Sociology—Introductory (2).

This course deals with data of the social sciences which are germane to the work of teachers. Consideration is given to implications of democratic ideology for educational endeavor, educational tasks imposed by changes in population and technological trends, the welfare status of pupils, the socio-economic attitudes of individuals who control the schools, and other elements of community background which have significance in relation to schools.

Ed. 162. Mental Hygiene in the Classroom (2).

The practical application of the principles of mental hygiene to classroom problems.

Ed. 163, 164, 165. Community Study Laboratory I, II and III (2, 2, 2).**Ed. 203. Problems in Higher Education (2).**

A study of present problems in higher education.

Ed. 210. The Organization and Administration of Public Education (2).

The basic course is school administration. The course deals with the organization and administration of school systems—at the local, state, and federal levels; and with the administrative relationships involved.

* Credit is accepted for Ed. 130 or Ed. 131, but not for both courses.

Ed. 215. Public Education in Maryland (2).

A study of Maryland Public School system with special reference to school law.

Ed. 219. Seminar in School Administration (2).**Ed. 223. Practicum in Personnel Relationships (2-6).**

Study of personnel relationships. Opportunities are provided for students to work with groups of laymen or school staff members on local school problems.

Ed. 225. School Public Relations (2).

A study of the relationships between the public school as a social institution and the community of which it is a part. This course deals with the agents who participate in the interpretative process; with propaganda and the schools; with the P. T. A. and the other lay supervisory groups, and with such means of publicity as the newspaper, radio, and school publications.

Ed. 250. Analysis of the Individual (2).

This course is concerned with considering policies for adjusting the school to the pupil; using the school's special services—attendance, health guidance—and records, reports, tests and inventories to promote a better understanding of the individual. Interpretation and use of data are stressed.

Ed. 269. Seminar in Guidance (2).**ELECTRICAL ENGINEERING**

E. E. 100. Alternating-Current Circuits (6). Prerequisites, Phys. 20, 21; Math. 20, 21; E. E. 1. Required of juniors in electrical engineering.

Single- and polyphase-circuit analysis under sinusoidal and non-sinusoidal conditions of operation. Harmonic analysis by the Fourier series method. Theory and operation of mutually-coupled circuits. Elementary symmetrical components.

E. E. 101. Engineering Electronics (6). Prerequisite, E. E. 100. Required of juniors in electrical engineering.

Theory and applications of electron tubes and associated circuits with emphasis on equivalent circuit analysis of audio amplifiers, reactance tubes, feedback amplifiers, oscillators, and detectors.

E. E. 104. Communication Circuits (3). Prerequisites, E. E. 60 and 100. Required of juniors in electrical engineering.

Long-line theory applied to audio-frequency and ultra-high-frequency systems. Elements of filter theory; impedance matching; Maxwell's equations in rectangular and cylindrical coordinates and in scalar notation; elements of rectangular and circular wave guide theory.

E. E. 108. Electric Transients (3). Prerequisite, E. E. 101.

Current, voltage, and power transients in lumped-parameter networks. Transient phenomena in sweep circuits, multi-vibrators, and inverters. Elements of square-wave testing.

E. E. 114. Applied Electronics (3). Prerequisite, E. E. 101. Senior elective.

Detectors and discriminators; oscillators; gas tube characteristics and associated circuits; photoelectric tubes and associated circuits; vacuum-tube instruments.

E. E. 120. Electromagnetic Waves (3). Prerequisite, senior standing in electrical engineering or physics and "B" average in mathematics.

Basic mathematical theory of electromagnetic wave propagation employing Maxwell's equations in vector form and in generalized coordinates; application to wave-guide transmission; concept of retarded magnetic vector potential and its application to dipole radiation. Required of M.S. degree candidates in electrical engineering.

E. E. 200. Symmetrical Components (3). Prerequisite, E. E. 103.

Application of the method of symmetrical components to synchronous generators, transmission lines, transformers, static loads possessing mutual coupling, and induction motor loads. Methods of calculating positive, negative, and zero sequence reactances of transmission lines. Complete network solution in terms of symmetrical components and comparison of these solutions with that obtained by classical methods. Methods of measuring positive, negative, and zero sequence reactances of synchronous generators.

E. E. 201. Electromagnetic Theory (3). Prerequisite, E. E. 120.

Theoretical analysis and engineering applications of Laplace's, Poisson's, Maxwell's equations. Required of M.S. degree candidates in electrical engineering.

E. E. 202, 203. Transients in Linear Systems (3, 3). Prerequisite, undergraduate major in electrical engineering, mechanical engineering, or physics.

Operational circuit analysis; the Fourier integral, transient analysis of electrical and mechanical systems and vacuum tube circuits by the Laplace transformer method. Required of M.S. degree candidates in electrical engineering.

E. E. 204, 205. Advanced Circuit Analysis (3, 3). Prerequisites, undergraduate major in either physics or electrical engineering.

The wave character of the steady-state, long-line solutions; attenuation and phase characteristics; phase and group velocities; four-terminal network theory matrix algebra applied to network theory; conventional filter theory.

E. E. 206, 207. Ultra High-Frequency Techniques (3, 3). Prerequisite, E. E. 201.

Basic consideration in solving field problems by differential equations; circuit concepts and their validity at high frequency; propagation and reflection of electromagnetic waves; guided electromagnetic waves; high-frequency oscillators and tubes; radiation engineering.

E. E. 235. Applications of Tensor Analysis (3). Prerequisite, E. E. 202.

The mathematical background of tensor notation which is applicable to electrical engineering problems. Applications of tensor analysis to electric circuit theory and to field theory.

E. E. 250. Electrical Engineering Research. Prerequisite, approved application for candidacy to the degree of Master of Science or Doctor of Philosophy in electrical engineering. Six semester hours of credit in E. E. 250 are required of M.S. degree candidates and a minimum of twelve semester hours are required of Ph.D. candidates.

A thesis covering an approved research problem and written in conformity with the regulations of the Graduate School is a partial requirement for either the degree of Master of Science or the degree of Doctor of Philosophy in electrical engineering.

ENGLISH LANGUAGE AND LITERATURE

Eng. 1, 2. Composition and American Literature (3, 3). Required of freshmen. Prerequisite, three units of high school English.

Grammar, rhetoric, and the mechanics of writing; frequent themes. Readings will be in American literature.

Eng. 3, 4. Composition and World Literature (3, 3). Prerequisite, Eng. 1, 2. Eng 3, 4, or Eng. 5, 6, or some combination of the two required of sophomores.

Practice in composition. An introduction to world literature, foreign classics being read in translation.

Eng. 7. Technical Writing (2). Prerequisite, Eng. 1, 2.

For students desiring practice in writing reports, technical essays, or popular essays on technical subjects.

Eng. 140. The English Novel—Victorian Period (3).

The development of the novel; readings in the major novelists of the period.

Eng. 145. The Modern Novel (3).

Major English and American novelists of the twentieth century.

FOREIGN LANGUAGES

French

French 1, 2. Elementary French (3, 3). Students who offer two units in French for entrance, but whose preparation is not adequate for second-year French, receive half credit for this course.

Elements of grammar; pronunciation and conversation; exercises in composition and translation.

French 4, 5. Intermediate Literary French (3, 3). Prerequisite, French 1 and 2 or equivalent. Second-year French for students interested in literature or in fields related to literature. Students who expect to do major or minor work in French are required, however, to take French 17 in place of the second semester of this course.

Translation; conversation; exercises in pronunciation. Reading of texts designed to give some knowledge of French life, thought, and culture.

Spanish

Spanish 1, 2. Elementary Spanish (3, 3).

Students who offer two units in Spanish for entrance, but whose preparation is not adequate for second-year Spanish, receive half credit for this course.

Spanish 4, 5. Intermediate Spanish (3, 3). Prerequisite, Spanish 1, 2, or equivalent. Students who do major or minor work in Spanish are advised to take Spanish 17 in place of the second semester of this course.

Translation, grammar review, exercise in pronunciation. Reading of texts designed to give some knowledge of Spanish and Latin-American life, thought, and culture.

GEOGRAPHY

Geog. 30. Principles of Physical Geography (3).

A systematic study of the physical features of the earth's surface, including subordinate land forms. The course is designed to give an understanding of major physiographic processes and of the genesis of various types of land forms.

Geog. 31. Problems of Cartographic Representation (3). Two hours lecture and two hours laboratory a week. Prerequisite, Geog. 20 and 30, or equivalent.

Introduction to theory of projections. Study of principles and problems of representation of natural features according to map scales, and of generalization and symbolization; also of classification, representation, and generalization of cultural features, including place-name selection.

Geog. 90. Problems of Cartographic Procedure (3). Two hours lecture and two hours laboratory a week. Prerequisite, Geog. 30.

Study of compilation methods and their relationship to drafting and reproduction methods, including basic concepts of compilation, criteria used in the selection of methods of transfer, relationships of reproduction methods to the degree of accuracy, drafting methods in compilation and in color-separation work, and analysis of type styles and their uses.

Geog. 100. Regional Geography of the United States and Canada (3). Prerequisites, Geog. 1, 2, or Geog. 60, 61, or permission of instructor.

The climate, land forms, soils and minerals, forests, agriculture, industries, and commerce; the people and their occupations, by regions. Several all-day field trips are required.

Geog. 130, 131. Economic and Political Geography of Southern and Eastern Asia (3, 3).

A study of China, Japan, India, Burma, Indo-China and the Dutch East Indies; natural resources, population, and economic activities. Comparisons of physical and human potentialities or major regions and of their economic, social, and political development.

Geog. 150. Problems of Map Evaluation I—Topographic Maps (3). Two hours lecture and two hours laboratory a week. Prerequisite, Geog. 30.

Review of status of topographic mapping with consideration of important schools of topographic concepts and practices. Theoretical and practical means of determining map reliability and utility, including studies of map coverage. Emphasis on methods of preparation of data for compilation purposes, including a study of types of source materials. Methods of map cataloging and bibliography are given brief consideration.

Geog. 151. Problems of Map Evaluation II—Non-topographic Special-use Maps (3). Two hours lecture and two hours laboratory a week. Prerequisite, Geog. 150.

Deals exclusively with non-topographic special-use types of maps such as military-geographic, military-geologic, climatic, pedologic, isogonic, economic, water supply, terrain appreciation maps, etc.

Geog. 160. Elementary Toponymy (3). Prerequisite, Geog. 30 and one foreign language.

Problems of place-name analysis as related to cartography, especially those involved in making and interpreting foreign maps, the language aspects of gazeteers and the problems of compilation of cartographic dictionaries. The course will close with a review of the linguistic aspects of air charts, hydrographic charts, and the International Map of the World.

Geog. 210. Seminar in Cartography (Credit to be arranged). (On Campus.)

The historical and mathematical background of cartographic concepts, practices and problems, and the various philosophical and practical approaches to cartography. Discussions will be supplemented by the presentation of specific cartographic problems investigated by the students.

GEOLOGY

Geol. 2. Engineering Geology (2).

The fundamentals of geology with engineering applications.

GOVERNMENT AND POLITICS

G. & P. 1. American Government (3).

This course is designed as the basic course in government for the American Civilization program, and it or its equivalent is a prerequisite to all other courses in the Department. It is a comprehensive study of governments in the United States and of their adjustment to changing social and economic conditions.

G. & P. 101. International Political Relations (3). Prerequisite, G. & P. 1.

A study of the principles governing international intercourse in times of influence of geography, climate, nationalism, and imperialism, and the development of international organization, with emphasis on the United Nations.

G. & P. 102. International Law (3). Prerequisite, G. & P. 1.

A study of the major factors underlying international relations, the peace and war, as illustrated in texts and cases.

G. & P. 106. American Foreign Relations (3). Prerequisite, G. & P. 1.

The principles and machinery of the conduct of American foreign relations, with emphasis on the Department of State and the Foreign Service, and analysis of the major foreign policies of the United States.

G. & P. 110. Principles of Public Administration (3). Prerequisite, G. & P. 1.

A study of public administration in the United States, giving special attention to the principles of organization and management and to fiscal, personnel, planning, and public relations practices.

G. & P. 142. Recent Political Theory (3). Prerequisite, G. & P. 1.

A study of nineteenth and twentieth century political thought, with special emphasis on recent theories of socialism, communism, fascism.

G. & P. 154. Problems of World Politics (3). Prerequisite, G. & P. 1.

A study of governmental problems of international scope, such as causes of war, problems of neutrality, and propaganda. Students are required to report on readings from current literature.

HISTORY

H. 5, 6. History of American Civilization (3, 3). Required for graduation of all students who enter the University after 1944-45. Normally to be taken in the sophomore year.

H. 108. Social and Economic History of the United States Since 1900 (3). Prerequisites, H. 5, 6, or the equivalent.

A study of the outstanding social and economic problems and of the cultural changes of twentieth century America.

H. 129 The United States and World Affairs (3). Prerequisites, H. 5, 6, or the equivalent.

A consideration of the changed position of the United States with reference to the rest of the world since 1917.

H. 135, 136. Constitutional History of the United States (3, 3). Prerequisites, H. 5, 6, or the equivalent.

A study of the historical forces resulting in the formation of the Constitution, and the development of American constitutionalism in theory and practice thereafter.

(If the demand is sufficient, H. 136 will be offered in the Summer of 1950.)

H. 141, 142. History of Maryland (3, 3). Prerequisites, H. 5, 6, or the equivalent.

First semester, a survey of the political, social and economic history of colonial Maryland. Second semester, Maryland's historical development and role as a state in the American Union.

H. 145, 146 Latin-American History (3, 3). Prerequisites, 6 hours of fundamental courses.

A survey of the history of Latin America from colonial origins to the present, covering political, cultural, economic, and social development, with special emphasis upon relations with the United States.

H. 175, 176. Europe in the World Setting of the Twentieth Century (3, 3). Prerequisites, H. 1, 2, or H. 3, 4.

A study of political, economic, and cultural developments in twentieth century Europe with special emphasis on the factors involved in the two World Wars and their global impacts and significance.

H. 186. History of the British Empire (3). Prerequisites, H. 1, 2, or H. 3, 4.

The rise of the Second British Empire and the solution of the problem of responsible self-government, 1783-1867; the evolution of the British Empire into a Commonwealth of Nations, and the development and problems of the dependent Empire.

H. 191. History of Russia (3). Prerequisites, H. 1, 2, or the equivalent. A history of Russia from the earliest times to the present day.

H. 193. History of the Near East (3). Prerequisites, H. 1, 2, or H. 3, 4. A study of the Balkans and of Turkey from earliest times to the present.

H. 195. The Far East (3).

A survey of the institutional, cultural and political aspects of the history of China and Japan, and a consideration of present-day problems of the Pacific area.

HUMAN DEVELOPMENT

H. D. Ed. 102, 103, 104. Child Development Laboratory I, II and III (2, 2, 2). Prerequisite, General or Educational Psychology or any course in Human Development.

This course involves the direct study of children throughout the school year. Each participant gathers a wide body of information about an individual; presents the accumulating data from time to time to the study group for criticism and group analysis, and writes an interpretation of the dynamics underlying the child's learning, behavior and development.

INDUSTRIAL EDUCATION

Ind. Ed. 10. Art Crafts II (2).

Art Crafts II offers work experiences in model building, ceramics, graphic arts, and paper construction. Laboratory fee, \$3.00.

Ind. Ed. 108. Electricity III (2). Prerequisite, Ind. Ed. 28, or equivalent. principles of electricity.

Experimental development of apparatus and equipment for teaching the principles of electricity.

Ind. Ed. 150. Training Aids Development (2).

Study of the aids in common use as to their source and application. Special Emphasis is placed on principles to be observed in making aids useful to shop teachers. Actual making and application of such an aid will be required.

Ind. Ed. 164. Shop Organization and Management (2).

This course covers the basic elements of organizing and managing an Industrial Education program including the selection of equipment and the arrangement of the shop.

Ind. Ed. 168. Trade or Occupational Analysis (2).

Provides a working knowledge of occupational and job analysis which is basic in organizing Industrial Education courses of study. This course should precede Ind. Ed. 169.

Ind. Ed. 214. School Shop Planning and Equipment Selection (2).

This course deals with principles involved in planning a school shop and provides opportunities for applying these principles. Facilities required in the operation of a satisfactory shop program are catalogued and appraised.

Ind. Ed. 216. Supervision of Industrial Arts (2).

MATHEMATICS

Math. 0. Basic Mathematics (0). Required of students who fail the qualifying examination for Math. 5 or 10.

The fundamental principles of algebra.

Math. 10. Algebra (3). Prerequisite, one unit each of algebra and plane geometry. Open to biological, premedical, pre dental, and general Arts and Science students.

Fundamental operations, factoring, fractions, linear equations, exponents and radicals, logarithms, quadratic equations, variation, binomial theorem, theory of equations.

Math. 11. Trigonometry and Analytic Geometry (3). Prerequisite, Math. 10, or equivalent. Open to biological, premedical, pre dental, and general Arts and Science students. This course not recommended for students planning to enroll in Math. 20.

Trigonometric functions, identities, addition formulas, solution of triangles, coordinates, locus problems, the straight line and circle, conic sections, graphs.

Math. 17. Analytic Geometry (4). Prerequisite, Math. 14 and 15, or equivalent. Open to students in engineering, education, and the physical sciences.

Coordinates, locus problems, the straight line and circle, graphs, transformation of coordinates, conic sections, parametric equations, transcendental equations, solid analytic geometry.

Math. 19. Mathematics Refresher (0). (Equivalent of 4 credits.)

Review of trigonometric functions, identities, the radian, graphs, addition formulas, solution of triangles, trigonometric equations; and, review of coordinates, locus problems, the straight line and circle, graphs, transformation of coordinates, conic sections, parametric equations, transcendental equations, solid analytic geometry.

Math. 20, 21. Calculus (4, 4). Prerequisite, Math. 17, or equivalent. Open to students in engineering, education and the physical sciences.

Limits, derivatives, differentials, maxima and minima, curve sketching, rates, curvature, kinematics, integration with geometric and physical applications, partial derivatives, space geometry, multiple integrals, infinite series.

Math. 64. Differential Equations for Engineers (3). Prerequisite, Math. 21, or equivalent. Required of students in mechanical and electrical engineering.

Ordinary and partial differential equations of the first and second order with emphasis on their engineering applications.

Math. 103. Introduction to Modern Algebra (3). Prerequisite, Math. 20, 21, or equivalent.

Linear dependence, matrices, groups, vector spaces.

Math. 110, 111. Advanced Calculus (3, 3). Prerequisite, Math. 20, 21, or equivalent.

Limits, continuous functions, differentiation and integration with application to mechanics, infinite series, Fourier series, functions of several variables, differential equations with applications to mechanics and physics, multiple integrals, the theorems of Gauss and Stokes, the calculus of variations.

Math. 114, 115. Differential Equations (3, 3). Prerequisite, Math. 20, 21, or equivalent.

Ordinary differential equations, symbolic methods, successive approximations, solutions in series, orthogonal functions, Bessel functions, Sturmian theory. Partial differential equations of first and second order, characteristics, boundary value problems, Pfaffians, systems of equations, applications.

Math. 116. Introduction to Complex Variable Theory (3). Prerequisite, Math. 20, 21, or equivalent. Open to students of engineering and the physical sciences. Graduate students of mathematics should enroll in Math 210, 211.

Fundamental operations in complex numbers, differentiation and integration, analytic functions, conformal mapping, residue theory, power series.

Math. 117. Fourier Series (3). Prerequisite, Math. 114, or equivalent.

Representation of functions by series of orthogonal functions. Applications to the solution of boundary value problems of some partial differential equations of physics and engineering.

Math. 132, 133. Advanced Mathematics for Engineers and Physicists (3, 3). Prerequisite, Math. 64, or equivalent.

Designed to introduce the student to advanced mathematical methods and their applications to problems arising in the fields of aeronautical, electrical and mechanical engineering, and in the physical sciences.

Math. 134. Vector Analysis (3). Prerequisite, Math. 20, 21, or equivalent.

Vector algebra with applications to geometry and mechanics.

Math. 139. Operational Calculus (3). Prerequisite, Math. 64, or equivalent. Intended for students of engineering and physics.

Operational solutions of ordinary and partial differential equations. Fourier and Laplace transforms.

Math. 154, 155. Applications of Statistics (3, 3). Prerequisites, Math. 20, 21, or equivalent.

This course is intended for those who desire a working knowledge of statistical methods without going into the finer points of the mathematical theory. Tools of probability theory, testing hypotheses, power of tests, tests of goodness of fit, estimation, design of experiments, moments, curve fitting, regression, and correlation.

Math. 210, 211. Functions of a Complex Variable (3, 3). Prerequisite, advanced calculus.

Complex numbers, infinite series, Cauchy-Riemann equations, conformal mapping, complex integral, the Cauchy theory, the Weierstrass theory, Riemann surfaces, algebraic functions, periodic and elliptic functions, the theorems of Weierstrass and Mittag-Leffler.

Math. 227. Tensor Analysis (3). Prerequisites, advanced calculus and differential equations.

Algebra and calculus of tensors, Riemannian Geometry and its extensions, differential invariants, applications to physics and engineering, the theory of relativity.

Math. 230, 231. Applied Mathematics (3, 3). Prerequisite, advanced calculus and differential equations.

The subject material for this course will be chosen from the fields of dynamics, elasticity, hydro-dynamics.

MECHANICAL ENGINEERING

M. E. 200, 201. Advanced Dynamics (3, 3). Prerequisites, Mech. 52; Math. 64; M. E. 107; M. E. 109

Mechanics of machinery. Dynamic forces. Balancing of rotating parts. Vibrations and vibration damping. Critical speeds.

M. E. 202, 203. Applied Elasticity (3, 3). Prerequisite, Mech. 52; Math. 64; M. E. 107.

Advanced methods in structural and experimental stress analysis. Advanced strength of materials involving beam problems, curved bars, thin plates and shells, buckling of bars, plates and shells, etc. Advanced work in stress concentrations, plastic deformations, etc., and problems involving instability of structures.

M. E. 204, 205. Advanced Thermodynamics and Heat Transfer (3, 3). Prerequisites, M. E. 101, 104, 105; Math. 64.

Advanced problems in thermodynamics on compression of gases and liquids, combustion and equilibrium, humidification and refrigeration and availability. Problems in advanced heat transfer covering the effect of radiation, conduction, and convection, steady and unsteady flow, evaporation and condensation.

MILITARY SCIENCE AND TACTICS

M. S. 151. Military Logistics (3).

A study of organization, troop movements by Motor, Rail, Air, Water. Evacuation replacements and prisoner of war, characteristics of materiel, supply. Staff, procedure to include organization, duties, and actions.

M. S. 153. Military Policy of the United States (3).

A study of our military history and our military policy and the effects of the latter on the former.

NURSING EDUCATION

N. Ed. 115, 116. Ward Management and Clinical Teaching (2, 2).

This course covers the administrative phase of a hospital unit or ward, especially the assigning of duties according to the level of ability of the worker. Emphasis is placed on hospital economics and the budgeting of supplies. A program for clinical bedside teaching is stressed through the entire course.

PHYSICAL EDUCATION

Courses open only to men are given odd numbers.

Courses open only to women have even numbers.

Courses for men and women have numbers ending with zero.

P. E. 140. Therapeutics (3). Prerequisite, P. E. 100.

A study of common structural abnormalities, corrective (adaptive) exercises, and massage. Causes, prevention and correction of postural defects. Testing methods. Theory and practice.

P. E. 150. History and Philosophy of Physical Education (2).

The study of the origins and derivations of modern physical education and the implications of the modern program for human welfare.

P. E. 190. Administration and Supervision of Physical Education, Health, and Recreation (3). First and second semesters.

The application of the principles of administration and supervision to physical education, health, and recreation.

PHYSICS

Phys. 1. Elements of Physics: Mechanics, Heat, and Sound (3). The first half of a survey course in general physics. *This course is for the general student and does not satisfy the requirements of the professional schools.* Prerequisite, successful passing of the qualifying examination in elementary mathematics. Lecture demonstration fee, \$3.00.

Phys. 2. Elements of Physics: Magnetism, Electricity, and Optics (3). The second half of a survey course in general physics. *This course is for the general student and does not satisfy the requirements of the professional schools.* Prerequisite, Phys. 1. Lecture demonstration fee, \$3.00.

Phys. 20. General Physics: Mechanics and Heat (5). The first half of a course in general physics. *Required of all students in the engineering curricula.* Math. 20 is to be taken concurrently. Lecture demonstration and laboratory fee, \$6.00.

Phys. 21. General Physics: Sound, Optics, Magnetism, and Electricity (5). The second half of a course in general physics. *Required of all students in the engineering curricula.* Prerequisite, Phys. 20. Math. 21 is to be taken concurrently. Lecture demonstration and laboratory fee, \$6.00.

Phys. 100. Advanced Experiments. Three hours' laboratory work for each credit hour. One or more credits may be taken concurrently. Prerequisites, Phys. 52 or 54 and four credits in Phys. 60. Laboratory fee, \$6.00 per credit hour.

Phys. 102. Optics (3). Prerequisites, Phys. 11 or 21 and Math. 21.

Phys. 104, 105. Electricity and Magnetism (3, 3). Prerequisites, Phys. 11 or 21 and Math. 21.

Phys. 106, 107. Theoretical Mechanics (3, 3). Prerequisites, Phys. 11 or 21 and Math. 21.

Phys. 112, 113. Modern Physics (2, 2). Prerequisites, Phys. 102 or 104.

Phys. 120, 121. Experimental Nuclear Physics (3, 3). Prerequisite, Phys. 115, and two credits of Phys. 100.

Phys. 200, 201. Introduction to Theoretical Physics primarily for students planning to do graduate work (5, 5). Prerequisite, advanced standing in physics and mathematics.

Phys. 204. Electrodynamics (4). Prerequisite, Phys. 201.

Phys. 206. Physical Optics (3). Prerequisite, Phys. 201.

Phys. 208, 209. Thermodynamics (2, 2). Prerequisite, Phys. 201, or equivalent.

Phys. 212, 213. Introduction to Quantum Mechanics (2, 2). Prerequisite, Phys. 201.

Phys. 224, 225. Supersonic Aerodynamics and Compressible Flow (2, 2). Prerequisite, Phys. 201.

Phys. 228, 229. The Electron (2, 2). Prerequisite, Phys. 204 and Phys. 213.

Phys. 230. Seminar (1).

Phys. 236. Theory of Relativity (3). Prerequisite, Phys. 200.

Phys. 238. Quantum Theory—selected topics (3). Prerequisite, Phys. 236.

Phys. 242, 243. Theory of Solids (2, 2). Prerequisite, Phys. 213.

Phys. 240, 241. Theory of Sound and Vibrations (2, 2). Prerequisite, Phys. 201.

Phys. 250. Research. (Credit according to work done).

PSYCHOLOGY

Psych. 1. Introduction to Psychology (3). Not open to Freshmen.

A basic introductory course, intended to bring the student into contact with the major problems confronting psychology and the more important attempts at their solution.

Psych. 2. Applied Psychology (3). Prerequisite, Psych. 1 or 3.

Application of research methods to basic human problems in business and industry, in the professions, and in other practical concerns of everyday life.

Psych. 110. Educational Psychology (3). Prerequisite, Psych. 1 or 3.

Researches on fundamental psychological problems encountered in education; measurement and significance of individual differences, learning, motivation, transfer of training.

Psych. 121. Social Psychology (3). Prerequisite, Psych. 1 or 3.

Psychological study of human behavior in social situations; influence of others on individual behavior, social conflict and individual adjustment, communication and its influences on normal social activity.

Psych. 161. Psychological Techniques in Personnel Administration (3). Prerequisite, Psych. 128.

A survey course, intended for those who plan to enter some phase of personnel work, but who do not plan to undertake graduate study.

OFFICE TECHNIQUES AND MANAGEMENT

O. T. 1. Principles of Typewriting (2). Laboratory fee, \$7.50.

The goal of this course is the attainment of the ability to operate the typewriter continuously with reasonable speed and accuracy by the use of the "touch" system. This course should be completed prior to enrollment in O. T. 12, Principles of Shorthand.

SOCIOLOGY

Sociology 1 or its equivalent is prerequisite to all other courses in Sociology.

Sociology 1; 2, 183, 186, and 196 or their equivalents are required for an undergraduate major in Sociology.

Soc. 1. Sociology of American Life (3).

Sociological analysis of the American social structure; metropolitan, small town, and rural communities; population distribution, composition and change; social organization.

Soc. 52. Criminology (3). Prerequisite, Soc. 1 and sophomore standing.

Criminal behavior and the methods of its study; causation; typologies of criminal acts and offenders; punishment, correction, and incapacitation; prevention of crime.

Soc. 114. The City (3).

The rise of urban civilization and metropolitan regions; ecological process and structure; the city as a center of dominance; social problems, control, and planning.

Soc. 115. Industrial Sociology (3). Social organization of American industry; functions of members of industrial organization, status, social structure, patterns of interaction and relations of industry and society.

Soc. 118. Community Organization (3).

Community organization and its relation to social welfare; analysis of community needs and resources; health, housing, recreation; community centers; neighborhood projects.

Soc. 121, 122. Population (3, 3).

Population distribution, composition and growth in North America and Eurasia; trends in fertility and mortality; migrations; population prospects and policies.

Soc. 123. Ethnic Minorities (3).

Basic social processes in the relations of ethnic groups within the state; immigration groups and the Negro in the United States; ethnic minorities in Europe.

Soc. 144. Collective Behavior (3).

Social interaction in mass behavior; communication processes; structure and functioning of crowds, strikes, audiences, mass movements, and the public.

Soc. 147. Sociology of Law (3).

Law as a form of social control; interrelation between legal and other conduct norms as to their content, sanctions and methods of securing conformity; law as an integral part of the culture of the group; factors and processes operative in the formation of legal norms; legal norms as determinants of human behavior.

SPEECH AND DRAMATIC ART

Speech 1, 2. Public Speaking (2, 2). Prerequisite for advanced speech courses. Speech I prerequisite for Speech II.

The preparation and delivery of short original speeches; outside readings; reports, etc. It is recommended that this course be taken during the freshman year. Laboratory fee, \$1.00 for each course.

Speech 4. Voice and Diction (3).

Emphasis upon the improvement of voice, articulation, and phonation. May be taken concurrently with Speech 1, 2.

Speech 7. Public Speaking (2). For science students.

The preparation and delivery of speeches, reports, etc., on technical and general subjects. Laboratory fee, \$1.00.

Speech 101. Radio Speech (3). Prerequisite, Speech 4.

The theory and application of microphone techniques. Practice in all types of radio speaking. Laboratory fee, \$2.00.

Speech 102. Radio Production (3).

A study of the multiple problems facing the producer. Special emphasis is given to acoustic setup, casting, "miking," timing, cutting, and the coordination of personnel factors involved in the production of radio programs. Admission by consent of instructor. Laboratory fee, \$2.00.

Speech 103, 104. Speech Composition and Rhetoric (3, 3).

A study of rhetorical principles and models of speech composition in conjunction with the preparation and presentation of specific forms of public address.

Speech 105. Pathology (3).

The causes, nature, symptoms, and treatment of common speech disorders.

Speech 106. Clinic (3). Prerequisite, Speech 105.

A laboratory course dealing with the various methods of correction plus actual work in the clinic both on and off the campus.

SURVEYING

Surv. 1, 2. Plane Surveying (2, 2). Prerequisite, Math. 14. Surv. 1 required of sophomores in Aeronautical, Chemical, Electrical, and Mechanical Engineering. Surv. 1, 2 required of sophomores in Civil Engineering.

Theory and practice in the use of tape, compass, transit, and level. General survey methods, traversing, area, coordinates, profiles, cross-sections, volume, stadia.

ZOOLOGY**Zool. 1a, 1b. General Zoology (2, 2).**

This course, which is cultural and practical in its aim, deals with the basic principles of animal life. Typical invertebrates and a mammalian form are studied. Laboratory fee, \$6.00.

At College Park; Engineering and Bureau of Mines Buildings



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* Full time.

‡ Half time.

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† Approximately full time.

‡ Half time.

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Instructor in Clinical Operative Dentistry
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- CONRAD L. INMAN, *D.D.S.*.....3504 Grantley Road
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- *NANCY W. KIEHNE, *A.B.*.....5709 Chinguapin Parkway
Instructor in Visual Aids
- STANLEY M. KOTULA, *D.D.S.*.....533 S. Luzerne Avenue
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- ALBERT P. LAZOUSKAS, *D.D.S.*.....801 Braeside Road, Catonsville
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*Full time.

‡Half time.

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‡ Half time.

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BETTE E. MUHL.....	Riverside Drive, High Point
Stenographer	
MARY C. REED.....	215 N. Linwood Avenue
Accountant, Clinics	
KATHERINE L. UNDERWOOD.....	124 Newburg Avenue, Catonsville
Stenographer	

HISTORY

The Baltimore College of Dental Surgery occupies an important and interesting place in the history of dentistry. At the end of the regular session 1939-40 it completed its one hundredth year of service to dental education. The Baltimore College of Dental Surgery represents the first effort in history to offer institutional dental education to those anticipating the practice of dentistry.

The first lectures on dentistry in America were delivered by Dr. Horace H. Hayden in the University of Maryland, School of Medicine, between the years 1823-25. These lectures were interrupted in 1825 by internal dissensions in the School of Medicine and were discontinued. It was Dr. Hayden's idea that dental education merited greater attention than had been given it by medicine or could be given it by the preceptorial plan of dental teaching then in vogue. It was also his opinion that dental education should be developed as a special branch of medical teaching. The unfortunate circumstances of internal strife in the Medical School defeated the purpose of Dr. Hayden to engraft dental education upon medical education.

Dr. Horace H. Hayden began the practice of dentistry in Baltimore in 1800. From that time he made a zealous attempt to lay the foundation for a scientific, serviceable dental profession. In 1831 Dr. Chapin A. Harris came to Baltimore to study under Hayden. Dr. Harris was a man of unusual ability and possessed special qualifications to aid in establishing and promoting formal dental education. Since Dr. Hayden's lectures had been interrupted at the University of Maryland and there was an apparent unsurmountable difficulty confronting the creation of dental departments in medical schools, an independent college was decided upon. A charter was applied for and granted by the Maryland Legislature February 1, 1840. The first Faculty meeting was held February 3, 1840, at which time Dr. Horace H. Hayden was elected President and Dr. Chapin A. Harris, Dean. The introductory lecture was delivered by Dr. Hayden on November 3, 1840, to the five students matriculating in the first class. Thus was created as the foundation of the present dental profession the Baltimore College of Dental Surgery, the first dental school in the world.

Hayden and Harris, the admitted founders of the dental profession, contributed, in addition to the factor of dental education, other opportunities for professional growth and development. In 1839 the *American Journal of Dental Science* was founded, with Chapin A. Harris as its editor. Dr. Harris continued fully responsible for dentistry's initial venture into periodic dental literature to the time of his death. The files of the old *American Journal of Dental Science* testify to the fine contributions made by Dr. Harris. In 1840 the American Society of Dental Surgeons was founded, with Dr. Horace H. Hayden as its President and Dr. Chapin A. Harris as its Corresponding Secretary. This was the beginning of dental organization in America, and was the forerunner of the American Dental Association, which now numbers approximately sixty-eight thousand in its present membership. The foregoing suggests the unusual influence Baltimore dentists and the Baltimore College of Dental Surgery have exercised on professional ideals and policies.

In 1873, the Maryland Dental College, an offspring of the Baltimore College of Dental Surgery, was organized. It continued instruction until 1879, at which time it was consolidated with the Baltimore College of Dental Surgery. A department of dentistry was organized at the University of Maryland in the year 1882, graduating a class each year from 1883 to 1923. This school was chartered as a corporation and continued as a privately owned and directed institution until 1920, when it became a State institution. The Dental Department of the Baltimore Medical College was established in 1895, continuing until 1913, when it merged with the Dental Department of the University of Maryland.

The final combining of the dental educational interests of Baltimore was effected June 15, 1923, by the amalgamation of the student bodies of the Baltimore College of Dental Surgery and the University of Maryland, School of Dentistry; the Baltimore College of Dental Surgery becoming a distinct department of the University under State supervision and control. Thus we find in the Baltimore College of Dental Surgery, Dental School, University of Maryland, a merging of the various efforts at dental education in Maryland. From these component elements have radiated developments of the art and science of dentistry until the strength of its alumni is second to none, either in number or degree of service to the profession.

The University of Maryland Medical School was organized December 28, 1807, as the College of Medicine of Maryland. On December 28, 1812, the University of Maryland charter was issued to the College of Medicine of Maryland. There were at that period but four other medical schools in America—the University of Pennsylvania, founded in 1765; the College of Physicians and Surgeons of New York, in 1767; Harvard University, in 1782; and Dartmouth College, in 1797.

It is of interest to note that the University of Maryland as it now exists is the youngest State University in America, but that its various schools rank among the oldest in existence. The School of Medicine at its beginning was the fifth oldest existent medical school in America; the Law School was organized in 1823; the Dental School, 1840, is the oldest dental school in the world; the Pharmacy School was founded in 1841; the College of Agriculture, 1856, is the second oldest land grant college in America. While the present form of the University of Maryland is young, its substance and character date back to the earliest period in education in the various professions.

BUILDING

The School of Dentistry is located at the northwest corner of Lombard and Greene Streets, adjoining the University Hospital. The building occupied by the Dental School provides approximately fifty thousand square feet of floor space, is fireproof, splendidly lighted and ventilated, and is ideally arranged for efficient use. It contains a sufficient number of large lecture rooms, classrooms, a library and reading room, science laboratories, technic laboratories, clinic rooms, and locker rooms. It is furnished with new equipment throughout and provides every accommodation necessary for satisfactory instruction under comfortable arrangements and pleasant surroundings.

Special attention has been given to the facilities in clinic instruction. The large clinic wing contains 145 operating spaces; each space contains a chair, operating table and unit equipped with an electric engine, compressed air, gas, running water, etc. Clinic instruction is segregated, and the following departments have been arranged for effective teaching: Operative, Prosthesis (including Fixed Partial Prosthesis and Ceramics), Anesthetics and Surgery, Orthodontics, Diagnosis, Pathology, Pedodontics, Roentgenology, and Visual Aids. All technic laboratories are equipped with every modern facility to promote efficiency in instruction.

LIBRARY

The Dental School is fortunate in having one of the better equipped and organized dental libraries among the dental schools of the country. The Library is located in the main building and consists of a stack room, offices and a reading room accommodating ninety-six students. About 14,000 books and bound journals on dentistry and the collateral sciences, together with numerous pamphlets, reprints and unbound journals, are available for the student's use. More than 200 journals are regularly received by the Library. An adequate staff promotes the growth of the Library and assists the student body in the use of the Library's resources. The Library is financed by direct appropriations from

the State, by the income from an endowment established by the Maryland State Dental Association and by the proceeds of the sale of books to students. One of the most important factors of the dental student's education is to teach him the value and the use of dental literature in his formal education and in promoting his usefulness and value to the profession during practice. The Baltimore College of Dental Surgery is ideally equipped to achieve this aim of dental instruction.

COURSE OF INSTRUCTION

The Baltimore College of Dental Surgery, Dental School, University of Maryland, offers a course in dentistry devoted to instruction in the medical sciences, the dental sciences, and clinical practice. Instruction consists of didactic lectures, laboratory instruction, demonstrations, conferences, and quizzes. Topics are assigned for collateral reading to train the student in the value and use of dental literature. The curriculum for the complete course is found on pages 19 and 20.

REQUIREMENTS FOR ADMISSION

Applicants for admission must present evidence of having successfully completed two full years of work in an accredited college of arts and sciences based upon the completion of a four-year high-school course. No applicant will be considered who has not completed all requirements for advancement to the Junior year. Although a minimum of 60 semester credits, exclusive of Physical Education and Military Science, is required for admission, additional work is desirable. The scholastic attainments of the applicant must be of such quality as to insure a high standard of achievement in the dental course.

The college courses must include at least a year's credit in English, in biology, in physics, in inorganic chemistry, and in organic chemistry. All required science courses shall include both classroom and laboratory instruction. Formal credit in biology and physics, and a half year's credit in organic chemistry, but not in English and inorganic chemistry, may be waived in part or in whole in the case of exceptional students with three years or more of college credit earned in an accredited college or university. The credentials of all students admitted to the Dental School, University of Maryland, under the foregoing permissive regulation will be submitted for approval to the Council on Education of the American Dental Association.

REQUIREMENTS FOR MATRICULATION AND ENROLLMENT

In the selection of students to begin the study of dentistry the School considers particularly a candidate's proved ability in secondary education and his successful completion of prescribed courses in pre-dental collegiate training. The requirements for admission and the academic regulations of the College of Arts and Sciences, University of Maryland, are strictly adhered to by the School of Dentistry.

A student is not regarded as having matriculated in the School of Dentistry until such time as he shall have paid the matriculation fee of \$10.00, and is not enrolled until he shall have paid a deposit of \$100.00 to insure registration in the class.

APPLICATION PROCEDURE

Application blanks may be obtained from the office of the Dean. Each applicant should fill in this blank completely and mail it, together with the application fee and photographs, to the Director of Admissions, University of Maryland, Baltimore. The notes on the blank must be observed carefully.

A certificate of entrance will be issued to each qualified applicant, which will permit him to matriculate and to register in the class to which he has applied.

ADMISSION WITH ADVANCED STANDING

(a) Graduates in medicine or students in medicine who have completed two or more years in a medical school, acceptable to standards in the School of Medicine, University of Maryland, may be given advanced standing to the Sophomore year *provided* the applicant shall *complete* under competent regular instruction the courses in dental technology regularly scheduled in the first year.

(b) Applicant for transfer must (1) meet fully the requirements for admission to the first year of the dental course; (2) be eligible for promotion to the next higher class in the school from which he seeks to transfer; (3) show an average grade of five per cent above the passing mark in the school where transfer credits were earned; (4) show evidence of scholastic attainments, character and personality; (5) present letter of honorable dismissal and recommendation from the dean of the school from which he transfers.

(c) All applicants for transfer must present themselves in person for an interview before qualifying certificate can be issued.

ATTENDANCE REQUIREMENTS

In order to receive credit for a full session, each student must have entered and be in attendance on the day the regular session opens, at which time lectures to all classes begin, and remain until the close of the session, the dates for which are announced in the calendar of the annual catalogue.

Regular attendance is demanded. A student whose attendance in any course is unsatisfactory to the head of the department will be denied the privilege of final examination in any and all such courses. In certain unavoidable circumstances of absence the Dean may honor excuses, but a student with indifferent attendance will not be promoted to the next succeeding class.

GRADING AND PROMOTION

The following symbols are used as marks for final grades: A (100-91), B (90-84), C (83-77), and D (76-70), passing; F (below 70), Failure; I, Incomplete. Progress grades in courses are indicated as "Satisfactory" and "Unsatisfactory."

A Failure in any subject may be removed only by repeating the subject in full. Students who have done work of acceptable quality in their completed assignments but who, because of circumstances beyond their control, have been unable to finish all assignments, will be given an Incomplete. A student shall not carry an Incomplete into the next succeeding year. When he has completed the requirements for the removal of an Incomplete, the student shall be given the actual grade earned in the course.

Scholastic averages are computed on the basis of trimester credits assigned to each course and numerical values for grades. The numerical values are: A-4; B-3; C-2; D-1; F-0. The grade point average is the sum of the products of trimester credits and grade values, divided by the total number of trimester credits.

Students who attain a grade point average of 1.5 in the Freshman year will be promoted. At the end of the Sophomore year an over-all grade point average of 1.75 is required for promotion. A grade point average of 2.0 is required for promotion to the Senior year and for graduation.

EQUIPMENT

A complete list of necessary instruments and materials for technic and clinic courses and textbooks for lecture courses will be announced for the various classes. Each student will be required to provide himself with whatever is necessary to meet the needs of his course and present same to an assigned instructor for inspection. No student who does not meet this requirement will be permitted to go on with his class.

DEPARTMENT

The profession of dentistry demands, and the School of Dentistry requires, of its students, evidence of their good moral character. The conduct of the student in relation to his work and fellow students will indicate his fitness to be taken into the confidence of the community as a professional man. Integrity, sobriety, temperate habits, truthfulness, respect for authority and associates, and honesty in the transaction of business affairs as a student will be considered as evidence of good moral character necessary to the granting of a degree.

REQUIREMENTS FOR GRADUATION

The degree of Doctor of Dental Surgery is conferred upon a candidate who has met the following conditions:

1. A candidate must furnish documentary evidence that he has attained the age of 21 years.
2. A candidate for graduation shall have attended the full scheduled course of four academic years.
3. He will be required to show a grade point average of 2.0 for the full course of study.
4. He shall have satisfied all technic and clinic requirements of the various departments.
5. He shall have paid all indebtedness to the college prior to the beginning of final examinations, and must have adjusted his financial obligations in the community satisfactorily to those to whom he may be indebted.

FEES

Freshmen:

Matriculation fee (required of all entering students).....	\$ 10.00
Tuition	* 375.00
Laboratory fee	30.00
Student health service fee.....	20.00
Anatomy fee	15.00
Laboratory breakage deposit.....	5.00
Locker fee	5.00

Total amount of fees for freshman year..... \$460.00

Sophomores:

Tuition	*375.00
Laboratory fee	30.00
Student health service fee.....	20.00
Laboratory breakage deposit.....	5.00
Locker fee	5.00

Total amount of fees for sophomore year..... \$435.00

* See footnote on page 15.

Juniors:

Tuition	*375.00
Laboratory fee	30.00
Student health service fee.....	20.00
Locker fee	5.00

Total amount of fees for junior year..... \$430.00

Seniors:

Tuition	*375.00
Laboratory fee	30.00
Student health service fee.....	20.00
Locker fee	5.00
Graduation fee	15.00

Total amount of fees for senior year..... \$445.00

In addition to fees itemized in the above schedule, the following assessments are made by the University:

Application fee (paid at time of filing formal application for admission)	\$ 5.00
Penalty for late registration.....	5.00
Examinations taken out of class and re-examinations.....	5.00
One certified transcript of record is issued free of charge.	
Each additional copy is issued only upon payment of.....	1.00

STUDENT ACTIVITY FEE—SPECIAL

For the purpose of administering and disciplining various student activities the student body has voted a fee of \$12.00 to be paid at the opening of the school year to the treasurer of the Student Activity Committee.

REFUNDS

According to the policy of the University no fees will be returned. In case the student discontinues his courses, any fees paid will be credited to a subsequent course, but are not transferable.

REGISTRATION

The registration of a student in any school or college of the University shall be regarded as a registration in the University of Maryland, but when such student transfers to a professional school of the University or from one professional school to another, he must pay the usual matriculation fee required by each professional school.

A student who neglects or fails to register prior to or within the day or days specified for his school, will be called upon to pay a fine of \$5.00. The last day of registration with fine added to regular fees is Saturday at noon of the week in which instruction begins, following the specified registration period. (This rule may be waived only on written recommendation of the Dean.)

Each student is required to fill in a registration card for the office of the Registrar, and pay to the Comptroller one-half of the tuition fee in addition to all other fees noted as payable before being admitted to classwork at the opening of the session. The remainder of tuition and fees must be in the hands of the Comptroller during registration period for the second half of the academic year.

The above requirements will be rigidly enforced.

* This fee is fixed for students not resident in Maryland. All Maryland students are given the benefit of a one hundred dollar reduction per year.

DEFINITION OF RESIDENT STATUS OF STUDENT

Students who are minors are considered to be resident students if, at the time of their registration, their parents* have been residents of this State for at least one year.

Adult students are considered to be resident students if, at the time of their registration, they have been residents of this State for at least one year; provided such residence has not been acquired while attending any school or college in Maryland.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents* move to and become legal residents of this State by maintaining such residence for at least one full calendar year. However, the right of the student (minor) to change from a nonresident to a resident status must be established by him prior to registration for a semester in any academic year.

DEPARTMENT OF STUDENT HEALTH

The School undertakes to supply medical care for its students through the Department of Student Health. This care includes requisite diagnostic studies, medical attention, surgical procedures and hospitalization judged to be necessary by the Department.

It is not within the scope of the Department to provide medical care for conditions antedating each annual registration in the University; nor is it the function of this service to treat chronic conditions contracted by students before admission or to extend treatment to acute conditions developing in the period between academic years or during authorized school vacations. The cost of orthopedic appliances, the correction of visual defects, the services of special nurses, and special medication must be paid for by the student. The School does not accept responsibility for illness or accident occurring away from the community, or for expenses incurred for hospitalization or medical services in institutions other than the University Hospital, or, in any case, for medical expense not authorized by the Department of Student Health.

Every new student is required to undergo a complete physical examination, which includes oral diagnosis. Any defects noted must be corrected within the first school year. The passing of this examination is a requirement for the final acceptance of any student.

Each matriculant must present, on the day of his enrollment, a statement from his *ophthalmologist* regarding the condition of his eyes, and where defects in vision exist he shall show evidence that corrections have been made.

Students who need medical attention are expected to report at the office of the Department of Student Health. Under circumstances requiring home treatment, the students will be visited at their College residences.

If a student should enter the hospital during the academic year, the Department will arrange for the payment of part or all of the hospital expenses, depending on the length of stay and the special expenses incurred. This arrangement applies only to students admitted through the office of the School physician.

Prospective students are advised to have any known physical defects corrected before entering the School in order to prevent loss of time which later correction might involve.

THE GORGAS ODONTOLOGICAL SOCIETY

The Gorgas Odontological Society was organized in 1916 as an honorary student dental society with scholarship as a basis for admission. The society

* The term "parents" includes persons who, by reason of death or other unusual circumstances, have been legally constituted the guardians of and stand in loco parentis to such minor students.

is named after Dr. Ferdinand J. S. Gorgas, a pioneer in dental education, a teacher of many years' experience, and during his life a great contributor to dental literature. It was with the idea of perpetuating his name that the society adopted it.

Students become eligible for membership at the beginning of their Junior year if, during the preceding years of their dental course, they have attained a minimum grade point average of 2.90. No more than 30% of a class will be considered for membership. The meetings, held once each month, are addressed by prominent dental and medical men, an effort being made to obtain speakers not connected with the University. The members have an opportunity, even while students, to hear men associated with other educational institutions.

OMICRON KAPPA UPSILON

Phi Chapter of Omicron Kappa Upsilon honorary dental fraternity was chartered at the Baltimore College of Dental Surgery, Dental School, University of Maryland, during the session of 1928-29. Membership in the fraternity is awarded to a number not exceeding twelve per cent of the graduating class. This honor is conferred upon students who through their professional course of study creditably fulfill all obligations as students, and whose conduct, earnestness, evidence of good character and high scholarship recommend them to election.

The following graduates of the 1948 Class were elected to membership:

NORMAN DWIGHT ALLEN	MEDIE B. GUERRIERI
WILLIAM REED ALLEN	ERNEST HENRY HINRICHS, JR.
WILLIAM ROBERT BIDDINGTON	JOSE ENRIQUE MEDINA
WILLIAM PERCY GILLETTE DODSON	JAMES CLAUDE PAGE, JR.
STERLING EDWIN ZIMMERMAN	

The following graduates of the 1949 Class were elected to membership:

NORTON JOSEPH BLOCH	MITCHELL JOSEPH BURGIN
VIRON LEROY DIEFENBACH	

SCHOLARSHIP LOANS

A number of scholarship loans from various organizations and educational foundations are available to students in the School of Dentistry. These loans are offered on the basis of excellence in scholastic attainment and the need on the part of students for assistance in completing their course in dentistry. It has been the policy of the Faculty to recommend only students in the last two years for such privileges.

The Henry Strong Educational Foundation—From this fund, established under the will of General Henry Strong of Chicago, an annual allotment is made to the Baltimore College of Dental Surgery, Dental School, University of Maryland, for scholarship loans available for the use of young men and women students under the age of twenty-five. Recommendations for the privileges of these loans are limited to students in the Junior and Senior years. Only students who through stress of circumstances require financial aid and who have demonstrated excellence in educational progress are considered in making nominations to the secretary of this fund.

The Edward S. Gaylord Educational Endowment Fund—Under a provision of the will of the late Dr. Edward S. Gaylord, of New Haven, Connecticut, an amount approximating \$16,000 was left to the Baltimore College of Dental Surgery, Dental School, University of Maryland, the proceeds of which are to be devoted to aiding worthy young men in securing dental education.

The W. K. Kellogg Foundation—During World War II the Foundation recognized the burden that the accelerated course imposed upon many dental students who under normal circumstances would earn money for their education by employment during the summer vacation. The Foundation granted to this School a fund to provide rotating loans to deserving dental students.

ALUMNI ASSOCIATION

The first annual meeting of the Society of the Alumni of the Baltimore College of Dental Surgery was held in Baltimore, March 1, 1849. This organization has continued in existence to the present, its name having been changed to The National Alumni Association of the Baltimore College of Dental Surgery, Dental School, University of Maryland.

The officers of the Alumni Association for 1949-1950 are as follows:

CONRAD L. INMAN, Sr., President Medical Arts Building Baltimore 1, Maryland	HARRY B. MCCARTHY, President-Elect 5821 Bellona Avenue Baltimore 12, Maryland
PHILIP W. WINCHESTER, Vice-President Morgantown, North Carolina	
RILEY S. WILLIAMSON, JR., Secretary 3803 Lochearn Drive Baltimore 7, Maryland	HOWARD VAN NATTA, Treasurer Medical Arts Building Baltimore 1, Maryland
ALBERT C. ESKIN, Historian 63 Greene Street Cumberland, Maryland	JOSEPH C. BIDDIX, Editor 72 Dunkirk Road Baltimore 12, Maryland

EXECUTIVE COUNCIL

B. SARGENT WELLS, Chairman, 1950 Medical Arts Building Baltimore 1, Maryland	GEORGE J. PHILLIPS, 1950 Professional Building Baltimore 1, Maryland
HARRY LEVIN, 1951 3429 Park Heights Avenue Baltimore 15, Maryland	ARTHUR A. TETU, 1951 4th & D Streets Csparrows Point, Maryland
LAWRENCE W. BIMESTEFER, 1952 1 Kinship Road Dundalk, Maryland	ALBERT C. COOK, 1952 72 Pershing Street Cumberland, Maryland
ARTHUR L. DAVENPORT, Ex-Officio Baltimore Life Building Baltimore 1, Maryland	

TRUSTEES FOR NATIONAL ALUMNI FUND

TRUSTEES EX-OFFICIO

CONRAD L. INMAN, SR., President
HARRY B. MCCARTHY, President-Elect
B. SARGENT WELLS, Chairman of Executive Council
J. BEN ROBINSON, Dean

THREE YEAR TERM

ARTHUR I. BELL Medical Arts Building Baltimore 1, Maryland	JAMES J. MCCORMICK 53 Third Avenue Troy, New York
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TWO YEAR TERM

GEORGE E. HARDY, JR. Medical Arts Building Baltimore 1, Maryland	GERARD A. DEVLIN 49 Bleeker Street Newark 2, New Jersey
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ONE YEAR TERM

IRVING B. GOLBORO 1547 N. Gay Street Baltimore 13, Maryland	EDWARD C. MORIN 156 Broadway Pawtucket, Rhode Island
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PLAN OF CURRICULUM
1949-50 Session

	CLOCK HOURS						CREDITS		
	Trimester I		Trimester II		Trimester III		Total Lect.	Total Lab.	
	Lect.	Lab.	Lect.	Lab.	Lect.	Lab.			
FRESHMAN CLASS									
Biochemistry	24	36	24	36	24	36	72	108	9
Comparative Dental Anatomy .....	..	..	..	..	12	..	12	..	1
Dental Materials	12	72	12	72	..	..	24	144	6
Dental Prosthesis .....	..	..	..	..	..	72	..	72	2
Gross Anatomy	24	72	24	72	12	36	60	180	10
Histology and Embryology	24	48	24	48	24	48	72	144	10
Neuroanatomy .....	..	..	..	..	12	36	12	36	2
Tooth Morphology	12	36	12	36	..	36	24	108	5
Total	96	264	96	264	84	264	276	792	45
SOPHOMORE CLASS									
Anesthetics	12	..	12	..	12	..	36	..	3
Bacteriology	24	72	12	36	..	..	36	108	6
Dental Prosthesis .....	..	72	..	36	..	72	..	180	5
Endodontics .....	..	..	..	..	..	18	..	18	1
First Aid .....	..	..	..	..	6	..	6	..	..
Fixed Partial Prosthesis	12	72	6	36	..	36	18	144	6
Operative Dentistry	12	72	12	72	12	72	36	216	9
Oral and Written Expression	12	..	12	..	12	..	36	..	3
Pathology .....	..	..	12	36	24	72	36	108	6
Periodontics .....	..	..	..	..	12	18	12	18	2
Physiology	24	..	30	72	6	..	60	72	7
Total	96	288	96	288	84	288	276	864	48

DESCRIPTION OF COURSES

GROSS ANATOMY

Professor Hahn, Associate Professor Thompson, Assistant Professor Sussman and Dr. Pollack

This course consists of dissection and lectures, supplemented by frequent conferences, oral and written quizzes, and practical demonstrations. Each student is required to dissect the lateral half of the human body. The osteology of a given region is studied at the time of the dissection of that region so that the value of learning this phase of anatomy may be better demonstrated.

The subject is taught with the purpose of emphasizing the principles of structure of the body, the knowledge of which is derived from a study of its development, its organs and tissues, and the action of its parts.

Arrangements can be made to accommodate qualified students and dentists interested in research or in making special dissections or topographical studies.

NEUROANATOMY

Professor Hahn, Associate Professor Thompson, Assistant Professor Sussman and Dr. Pollack

Neuroanatomy is offered in the Freshman year following Gross Anatomy. The work consists of a study of the whole brain and spinal cord by gross dissections and microscopic methods. Function is taught with structure; correlation is made, whenever possible, with the student's work in the histology and physiology of the central nervous system.

HISTOLOGY AND EMBRYOLOGY

Professor McCrea and Miss Yamin

Histology, general and special dental, is given during the Freshman year and is presented by lectures and laboratory instruction. It embraces the thorough study of the cells, elementary tissues, and the organs of the various systems of the body. Special dental histology includes the gross and microscopic study of the oral cavity, teeth and their investing tissues. At all times correlations are made with the other phases of the curriculum. The use of fresh tissues in the laboratory is included to associate further the structure with function.

The course in Embryology is given by means of lectures and laboratory classes. It covers the fundamentals of the development of the human body, particular emphasis being given to the head and facial regions, oral cavity and teeth with their surrounding structures. At all times emphasis is placed on the association of embryology to histology and anatomy.

Students are trained in the proper use of the microscope and its accessories, and in staining, mounting and properly manipulating sections made for microscopic study. All sections are prepared for class.

ORAL ANATOMY

Associate Professors Miller and Thompson

The course in Oral Anatomy is designed to teach the form and structure of the teeth, and includes a study of the nomenclature of surfaces, divisions, and relations of the teeth. In the laboratory the student is trained in the carving of the various teeth and in the dissection of extracted teeth through their various dimensions. These lecture and laboratory exercises provide the student with a thorough knowledge of tooth form and structure.

The second part of the course includes a study of the supporting structures of the teeth and the relation of the teeth to these structures. The periods of beginning calcification, eruption, complete calcification, and shedding of the deciduous teeth; followed by the beginning calcification, eruption, and complete calcification of the permanent teeth are studied and correlated with the growth in size of the jaws and the face.

The third part of the course treats the evolutionary development of dentition as a necessary factor in the study of human oral anatomy. It includes a comparative study of the teeth of the animal kingdom, both vertebrates and invertebrates, with a comparative study of the number, position and form of the teeth.

BIOCHEMISTRY

Professor Vanden Bosche, Mr. Edberg and Mr. Smith

The course is given in the Freshman year. The prerequisite subjects are inorganic and organic chemistry. Additional training in analytical and physical chemistry is desirable.

Instruction is presented in the form of lectures, demonstrations and laboratory experience. The chemistry of living matter, its constituents and processes, forms the basis of the course. The detailed subject matter includes the chemistry of carbohydrates, fats, proteins, enzymes, vitamins, and hormones; the processes of respiration, digestion, metabolism, secretion and excretion are considered.

Instruction in qualitative and quantitative blood and urine examination is included. These procedures are given clinical application during the Junior and Senior years.

PHYSIOLOGY

Professor Oster and Dr. Shipley

The purpose of the course in Physiology is to equip the student of dentistry with a knowledge of the fundamental physiological functions of the human body. The basic physical and chemical properties and processes in living tissues and organisms are analyzed.

The material of the lectures is divided into sections concerned with nerve and muscle function, the central nervous system and its integrative role, respiration, digestion, metabolism, circulation, humoral control of function, water balance, kidney function, and the special senses.

Laboratory work is given in the second and third trimesters. Simple experiments performed on frogs and turtles are followed by more advanced work on cats and dogs and on the students themselves. Principles illustrating the application of physiology to medicine and dentistry are given special attention.

Throughout the course, emphasis is placed upon the experimental and objective approach to problems as the basis of the scientific method. Effort is made to present modern physiological developments and evaluate them in terms of their clinical significance.

PHARMACOLOGY AND THERAPEUTICS

Professor Dobbs and Dr. Rapoport

The course is designed to provide a general survey of pharmacology, affording the students the necessary knowledge for the practice of rational therapeutics.

The course is taught during the second and third trimesters of the junior year by lectures, laboratories and demonstrations. The second trimester consists of twenty-four (24) hours of didactic and twenty-four (24) hours of laboratory work including instruction in pharmacognosy, pharmaceutical chemistry, pharmacy, prescription writing, and the pharmacodynamics of the local-acting drugs.

The third trimester consists of thirty-six (36) hours of didactic and thirty-six (36) hours of laboratory instruction. The subject material consists of the pharmacodynamics of the systemic-acting drugs.

In therapeutics the students are instructed in the use of drugs for the prevention, treatment, and correction of general and oral diseases.

NUTRITIONAL THERAPEUTICS

Professor Dobbs

The course presented in the Senior year consists of twelve (12) hours of lectures and demonstrations devoted to the principles and practices of nutritional therapeutics. The presentation includes a study of the dietary requirements of essential food substances in health and disease. The vitamin and mineral deficiency states with their pathology and symptomatology are presented with suggestions for dietary and drug therapy. Metabolic diseases are discussed, and their effects on the nutritional states are considered. Diets are planned for patients with various nutritional problems, such as those resulting from loss of teeth, the use of new appliances, dental caries, stomatitis, cellulitis, osteomyelitis, and bone fractures.

A term paper is required for the purpose of acquainting the students with the current literature. A project study is made by each student which includes analyses of his basal metabolic requirement, his total energy requirement, and his dietary intake in relation to his daily needs.

ORAL THERAPEUTICS

Professor Dobbs

Oral therapeutics is presented in the Senior year and consists of twelve (12) hours of lectures and demonstrations. The course is designed to acquaint the students with the practical applications of pharmacology in the treatment of dental and oral diseases. Particular emphasis is given to the newer drugs and the more recent advances in therapeutics. Patients from the dental clinic and hospital will be used for demonstrations whenever possible.

BACTERIOLOGY

Associate Professor Shay and Mr. Schmersahl

The course in Bacteriology is given in the Sophomore year. It embraces lectures, demonstrations, recitations, and conferences, augmented by guided reading.

Practical and theoretical consideration is given to bacteria, both pathogenic and nonpathogenic, viruses, protozoa, and some of the yeasts and fungi.

Special attention is given to those organisms which cause lesions in and about the oral cavity, particularly primary focal infection about the teeth, tonsils, pharynx, nose, accessory sinuses, adenoids and nasopharynx, and the types of systemic disease which result from the establishment of secondary foci.

Immunity and serology are also dealt with, as well as antitoxins, antisera, bacterins, vaccines and other antigens.

Laboratory teaching includes the methods of staining and the preparation of media; cultural characteristics of bacteria are studied, their reaction to disinfectants, antiseptics, germicides and various methods of sterilization; animal inoculation, preparation of sera, vaccines, etc.; the various laboratory tests and reactions; and a study of the antibiotics.

GENERAL PATHOLOGY

Professor Aisenberg and Dr. A. D. Aisenberg

General pathology is taught in the Sophomore year by means of lectures, demonstrations, quizzes and laboratory work.

The general principles of disease processes and tissue reactions, both gross and microscopic, are taught with the objectives of training the student to recognize and be familiar with the abnormal and of creating a foundation for further study in the allied sciences.

Emphasis is placed upon those diseases in the treatment of which medicodental relationships are to be encountered.

SPECIAL ORAL PATHOLOGY

Professor Aisenberg and Dr. A. D. Aisenberg

Special Oral Pathology is taught in the first trimester of the Junior year. It includes a study of the etiology, the gross and microscopic manifestations, and the treatment of diseases of the teeth and their investing structures: namely, pathologic dentition, tooth malformations, dental anomalies, periodontal diseases, tissue changes in orthodontic movement of teeth, calcific deposits, dental caries, pulp diseases, focal infection, and oral manifestations of systemic diseases.

Instruction includes lectures, demonstrations, lantern slides, prepared slides, microscopic study of macroscopic specimens and models.

In an endeavor to correlate the scientific laboratories with clinical practice, the Department of Oral Pathology also carries on in the clinic the work of examination, diagnosis and treatment of Vincent's infection and periodontal diseases, and the filling of root canals.

ORAL DIAGNOSIS AND TREATMENT PLANNING

Professor Biddix, Associate Professor Golton, Drs. Bryant and Gigliotti

The Department of Oral Diagnosis emphasizes the study of fundamental principles and procedures in the diagnosis of oral and related diseases. The Junior and Senior students, in seminar groups, receive instruction by intimate clinical observation and discussion of interesting cases. An intelligent and scientific approach to each case is the prime teaching principle of this department.

Abundant clinic material is available so that the student may observe every type of disease to which the oral cavity is susceptible. Emphasis is placed upon the fact that one must approach a study of the oral cavity through an understanding of its relationship to other parts of the body. To this end the department is singularly fortunate in having easy access for consultation with the medical service of the University Hospital.

Treatment planning is given the great importance it deserves. Students are permitted to give their impressions of plans of treatment, which are carefully discussed in this department. Consultations with other departments are always available so that the practice of thorough diagnosis is developed.

Much time is given to the study of the relationship of mouth infection to systemic disease. The theory of focal infection is emphasized and properly evaluated so that the student may interpret clinical, roentgenologic, and laboratory findings in an intelligent and competent manner. A large collection of color slides serves to make lectures in oral diagnosis interesting and instructive.

OPERATIVE DENTISTRY

*Professor Randolph; Associate Professors Grempler and Scherr;
Drs. Beaven, Dressel, Lazauskas and Medina*

Operative Dentistry is the treatment of diseases and injuries of the teeth to restore the normal tooth forms and provide for the better health and function of the oral mechanism. The course of instruction is given during the Sophomore, Junior and Senior years.

In the Sophomore year, the student is trained in the technical procedures of instrumentation, cavity preparation and manipulation of restorative materials. The variables which must be observed in preparing cavities to receive different types of filling materials are carefully outlined. These modifications are carried out by the student in a series of cavity preparations made in composition teeth, arranged in normal proximal relation on forms especially designed for the purpose. These fundamental principles are then applied to extracted teeth in order that the student might study the characteristic resistance of tooth structure to instrumentation. The management of gold foil, amalgam, gold inlay and cement is given in detail and the student restores the prepared cavities with these materials. This course of instruction consists of twenty-four lectures and forty-eight laboratory periods. Demonstration lectures, visual aids and conferences are used to augment the student's training.

Operative Dentistry as taught in the Junior and Senior years is a continuing development of the principles presented in the Sophomore year. The student is trained to render a satisfactory Oral Health service by restoring pathologic teeth to their normal form and function and to evaluate new procedures suggested by experience and research as improvements in operative practice. These objectives are pursued through a combination of didactic and clinical instruction.

The didactic instruction includes twenty-four one-hour lectures offered during the Junior year, and twenty-four lectures during the Senior year. The student is instructed in the treatment of the pathology of the hard tissues of the teeth; he is taught how to apply the principles of idealism to unorthodox conditions; and he is directed in the professional treatment of his patients in terms of what they expect of him and what he can expect of them. A certain amount of time is devoted to conferences which provide the student an opportunity to bring his individual problems to the instructor for intimate discussion.

Clinical instruction includes the practical application of the principles underlying rational operative procedures. During the Junior and the Senior years the student treats the dental pathologies of several cases under the supervision of the Operative Instruction Staff.

DENTISTRY FOR CHILDREN

Associate Professor Scherr and Dr. Coberth

This course consists of lectures, clinics and technic laboratory instruction which cover the technical aspects of treatment of children's teeth. Instruction is offered in the fundamentals and modification required in the preparation of all classes of cavities in the temporary teeth for the proper reception of different filling materials, emphasizing conservation of tooth structure. The proper manipulation and insertion of various metallic and plastic filling materials are carefully taught. The proper care of the first permanent molars is particularly emphasized. Various methods and procedures indicated in the restoration of broken and fractured central incisors in children are demonstrated. For the purpose of rational tooth conservation the technic of partial pulpotomy is taught, together with its indications and contraindications. The problem of the premature loss of deciduous teeth which necessitates proper space maintenance is carefully considered. Methods of constructing various types of space retainers in the treatment of such spaces are demonstrated. Prophylaxis is emphasized as a factor in prevention.

A children's clinic, separate from the general operative clinic, equipped with sixteen chairs and supervised by a special pedodontia staff, offers an opportunity for clinical demonstration of the practices stressed in the lectures.

PREVENTIVE AND PUBLIC HEALTH DENTISTRY

Dr. Leonard

The objectives of this course are to emphasize those measures other than remedial operations that will tend to minimize the occurrence or the extension of oral pathology, and to outline the status of dentistry in the field of general public health. The relationships of dentistry with other phases of public health are discussed, as are the problems affecting the administration of dental health programs. Special effort is made to demonstrate methods and materials suitable for use in dental health education programs.

DENTAL MATERIALS

Professor Gaver, Assistant Professor Williamson, Drs. Bailey and Watson

This course is designed to provide the Freshman student with a scientific background in the nomenclature, composition, physical properties, practical application, and proper manipulation of the important materials used in the practice of Dentistry, excluding all drugs and medicinals.

The theoretical aspect of the course is presented by the instructors in the form of lectures, demonstrations, informal group discussions, and directed supplemental reading. From the practical standpoint, the student manipulates and tests the various materials in the laboratory, being guided by prepared project sheets. At the completion of each project, the student prepares and presents for grading a laboratory report on the material he has investigated.

At the termination of the course, the student will have developed an understanding of the following factors: the importance of scientific testing of a material before it is used by the profession at large; the realization of the fact that every material has its limitations, which can be compensated for only by intelligent application and manipulation; and an appreciation of the vast field of research open to those who wish to help improve the materials that are available at the present time.

DENTAL PROSTHESIS

*Professor Gaver; Associate Professor Warner;
Assistant Professors Ramsey and Williamson;
Drs. Bailey, Kotula, Smith and Watson*

This course is carried through four years of study and includes lectures, clinics, and demonstrations. It embraces lectures and technic work in the first and second years, and lectures and clinics in the third and fourth years.

The work of the first year is devoted to a study of materials used in denture construction. A series of lecture-demonstrations is given, explaining the properties and manipulation of all the materials used. Experiments and exercises are arranged to give the student practical knowledge of the materials demonstrated and are designed to impress the student with the importance of the essential fundamentals in all the various steps in full denture construction.

During the second year the instruction embraces a study of materials used in partial denture construction. Lecture-demonstrations, experiments, exercises, and technical demonstrations are given, using the same method of presentation as followed in the first year.

The course in the third year includes a study of the practical application in the Infirmary of the fundamentals taught in the preceding years. Demonstrations are offered of the various technics of impression and bite-taking to provide the student with additional knowledge necessary for practical work in the Infirmary.

The last year is given to the application in the Infirmary of the fundamentals taught in the previous year, particular attention being given to a standard method of denture construction by the clinical instructors to equip the student with a basic technic. The didactic course of this year includes all the various methods employed in advanced prosthesis.

FIXED PARTIAL PROSTHESIS

*Professor Nuttall; Associate Professor Dosh; Assistant Professor Wells;
and Dr. Browning*

Instruction in this department includes a laboratory course during the Sophomore and Junior years which embraces the teaching of the procedures necessary in abutment preparations, the construction of fundamental retainers and the assemblage of fixed partial dentures. The technics include wax manipulation, pattern carving, investing and casting, also the construction of pontics.

The didactic work in the Junior year includes a study of the biological factors, the mechanical requirements and the indications and contraindications of fixed partial prosthesis. During the Junior and Senior years excellent opportunities are offered students to fulfill practical requirements in the Prosthetic Clinic.

CERAMICS

Professor Nuttall and Associate Professor Dosh

Instruction is given in the history and development of porcelain as a restorative material in the treatment of mouth conditions and in the properties and manipulation of the porcelain elements. A study is made of the electric furnace and its usage, with technical demonstrations in baking crowns, inlays, pontics, porcelain-tipped pontics, and in glazing and staining. The work in lecture room, technic laboratory, and clinic is harmonized.

ORAL HYGIENE AND PERIODONTIA

*Associate Professor Hicks; Assistant Professors Eskow and Mazzotta;
and Dr. A. D. Aisenberg*

ORAL HYGIENE

Oral Hygiene is taught by a combined lecture and laboratory course.

Prevention, or care of the mouth, is stressed in lectures. Emphasis is placed on the functions and limitations of dentifrices and mouth washes, toothbrushes, and brushing methods; the role of diet in dental health and development and the relation of dental foci to systemic disease. Causes, results, treatment, and eradication of unhygienic conditions of the oral cavity are fully considered. Demonstrations are given in the prophylactic treatment and in the home care of the mouth, and in the methods of brushing teeth.

The student is taught in laboratory the fundamental use of scalers upon special mannikins. By progressive exercises and drills he is carried through the basic principles of good operating procedure and is taught the methods of a thorough prophylactic treatment. The class is divided into two sections, one as operators, the other as patients, to perform the actual clinical prophylactic treatment. The sections are then alternated.

PERIODONTIA

The lecture course presents the pathology, etiology, clinical symptoms, diagnosis, prognosis, and methods of treatment, of the various forms of periodontal disease. The recognition of periodontal disease in its incipient forms and the importance of early treatment are stressed. The various methods of treatment are considered and evaluated.

The lectures are well illustrated with color slides and moving pictures. Demonstrations, using patients, are correlated with the lecture course to show conditions of actual practice.

Infirmary practice is required of both Junior and Senior students. Individual cases are managed according to systematized procedure. Diagnosis is based on the study of radiographs, clinical signs and symptoms, models, and history, and each case is rated according to its own particular needs.

ORTHODONTICS

Professor Preis; Drs. Swinehart and Tongue

The orthodontic course consists of lectures to the Senior students throughout three trimesters. The subject matter includes the history of orthodontics; the study of growth and development of human dental occlusion; forces of occlusion; etiology of malocclusion; aberrations of the maxilla and mandible which affect occlusion.

The lectures are supplemented with clinical facilities which correlate the didactic instruction with the practical application of corrective measures.

The Junior students are scheduled for Orthodontic seminars that provide an opportunity for suitable introduction to the field of orthodontics.

ORAL SURGERY

Professor Dorsey; Associate Professors Ward and Yeager; Assistant Professor Toomey; Drs. Capfuccio, Hartsock, H. M. Robinson, and Siwinski

Oral Surgery is given in the Junior and Senior years and consists of lectures, clinical assignments, and practical demonstrations on the etiology, pathology, diagnosis and treatment of all classes of tumors, infections, deformities, anomalies, impacted teeth, fractures and of minor oral surgical conditions asso-

ciated with the practice of dentistry. Special group hospital clinics, demonstrations and ward rounds are given to familiarize the student with abnormal conditions incident to the field of his future operations and to train him thoroughly in the diagnosis of benign and malignant tumors.

Weekly seminars are held in the hospital and each senior student is required to prepare and present an oral surgery case report according to the requirements of The American Board of Oral Surgery.

Instruction is given in the classification of teeth for extraction, in the removal of teeth, and in the pre- and postoperative treatment of patients, both ambulatory and hospitalized.

Students are required to produce anesthesia and to extract teeth under the direction and supervision of an instructor.

Clinics are held to demonstrate the removal of impacted and imbedded teeth and cysts, and the treatment of fractures and other oral conditions requiring surgery. Abundant clinical material and adequate facilities enable the student to receive exceptional training and practice.

ANESTHETICS

Professor Dorsey; Assistant Professors Nelson and Toomey; Dr. Inman

Local anesthesia is taught both in principle and in practice. All types of intraoral, extraoral, conduction and infiltration injections; the anatomical relationship of muscles and nerves; the theory of action of anesthetic agents, the dangers involved, and toxic manifestations and their treatment, are taught in lectures and clinics. Demonstrations are given in conduction and infiltration technics, and students are required to give similar injections under direct supervision of the instructor.

General anesthesia is taught in both lecture and clinic, including the action of the anesthetic agents, methods of administration, indications and contraindications, dangers and the treatment of toxic manifestations. Demonstrations are given in the preparation of the patient, the administration of all general anesthetics (inhalant, rectal, spinal, and intravenous), and the technic for oral operations, with clinics being held in the Infirmary and in the Hospital.

ORAL ROENTGENOLOGY

Associate Professor Karn, Assistant Professor Dabrowski and Dr. Miller

The advances made in dental science and in the art of practice have established Roentgenology as one of the most important departments of dental education. The course offered is based on the universal utility of the x-ray in oral diagnosis and is consistent with the modern concept of preventive dentistry.

In the lectures are included a study of the physical principles involved in the production of Roentgen rays, a thorough discussion of their nature as to properties and effects, and the background of information necessary to their practical application.

In the clinic, students of the Junior and Senior years are in constant association with the routine practical use of the x-ray. They are required to master thoroughly the fundamental scientific principles thereof and to acquire a reasonable degree of technical skill, under supervision. It is the design of the course to equip students to take, process, and interpret all types of intraoral and extraoral films. Abundant clinical material is available as the result of a policy calling for the routine use of the x-ray in all oral diagnoses.

PRINCIPLES OF MEDICINE

Associate Professor McLean and Dr. Lebo

Principles of Medicine is taught by lecture, visual education, and clinical demonstrations. The course is given to the Junior and Senior classes for one hour a week during the entire year. The course is supplemented by comprehensive lectures in Physical Diagnosis given to the Senior class for one hour each week during the first trimester.

The purpose of the course is to give the dental student a general understanding of medical problems, especially of diagnostic and therapeutic procedures, and to show the close relationship between oral diseases and general systemic disturbances.

In the Junior year, the course is largely didactic, and the signs and symptoms of the more common diseases are discussed. In the Senior year, importance is placed on the close application of medical knowledge, with the emphasis on organic and psychosomatic diseases; the second half of the Senior year is devoted to medical clinics and seminars.

Available clinical material is used and free discussion is encouraged, in order to show the art of practice in history taking, diagnosis, laboratory examinations, and the modern concepts of treatment.

Guest lecturers present specific scientific papers relating to medical-dental topics.

PRACTICE MANAGEMENT

Professor McCarthy

The chief objective of this course is to prepare the students to assume intelligently the social, economic and professional responsibilities of dental practice. Training in practice management is a continuous growth with the student during his entire clinical experience.

In preparation for the course the students are given introductory lectures and demonstrations relative to the conduct of practice at the beginning of their Junior year when they come into the clinics for formal practice training. The training they receive in handling patients, keeping records, etc., serves as an introduction to the problems they will experience in practice.

The formal Senior lectures stress the selection of the proper office location, the purchasing of equipment, the reception and handling of patients, the establishing of fees, the methods of collecting accounts, the various types of insurance, and the selection of investments. A comprehensive bookkeeping system for a dental office is fully outlined and explained. The relationships of the dentist to his fellow practitioners, his supply dealers, his laboratories, and his community are fully discussed.

DENTAL HISTORY

Professor Robinson and Assistant Professor Foley

Dentistry occupies an important position in the present social structure because of its important relationship to the health of the individual and of the community. From its crude beginnings in ancient times the dental art has been improved down through the ages to the present by various educative processes and has gradually and firmly advanced in scientific quality and technological excellence. An appreciation of the true objectives of dentistry will be greatly enhanced by the practitioner's knowledge of its philosophy as revealed through an understanding of its development to its present state of usefulness. A knowledge of the history of dentistry is a necessary part of the education of the modern dentist. Lectures in Dental History portray the

beginning of the art of dental practice among ancient civilizations, its advancement in relation to the development of the so-called medical sciences in early civilizations, its struggle through the Middle Ages and, finally, its attainment of recognized professional status in modern times. Special attention will be given to the forces and stresses that have brought about the evolutionary progress from a primitive dental art to a scientific health service profession.

DENTAL ETHICS

Professor Robinson and Assistant Professor Foley

The course in Dental Ethics includes a series of lectures on the history of general ethics and its basic teachings, which is followed by an interpretation of philosophical principles in terms of a code of professional ethics and its application to the present-day needs of the dental profession. Emphasis is placed upon the importance of right conduct in the dentist's relation with the public, the profession, the patient, the physician, the specialist and his fellow dentist.

JURISPRUDENCE

Dr. Strahorn

The special aim in the course in Jurisprudence is to ground the student in the fundamentals of law as they relate themselves to the dentist and his patient. The rights and limitations of each are pointed out through lecture work and class conference. A series of practical cases in which suits have been threatened or entered by patients against the dentist will be reviewed in the light of trial table outcome or basis on which compromise adjustments have been made.

ORAL AND WRITTEN EXPRESSION

Professor Robinson and Assistant Professor Foley

A formal course of lectures is given in the second year. Many aspects of the instruction are given practical application in the third and fourth years. The course has many purposes, all of them contributing to the training of the students for effective participation in the extra-practice activities of the profession. Particular attention is given to instruction in the functioning of the agencies of communication in dentistry: the dental societies and the dental periodicals. The practical phases of the course include a thorough study of the preparation and uses of oral and written composition by the dental student and the dentist; the use of libraries; the compilation of bibliographies; the collection, the organization, and the use of information; the management of dental meetings; the oral presentation of papers; and professional correspondence.

VISUAL AIDS IN TEACHING

Assistant Professor Ezekiel, Mrs. Kiehne, and Miss Wood

Visual aids are essential to instruction in all the courses of the dental curriculum. From his first class to his graduation day the student's learning is assisted by the use of visual materials.

Through photography the School retains for teaching purposes many interesting cases that appear in the clinics, preserves evidence of unusual pathological cases, and records anatomical anomalies, facial disharmonies and malocclusions of the teeth. In addition the student, through his contacts with photographic uses, becomes acquainted with the value of photography in clinical practice and acquires a working knowledge of black and white and color photography, still and motion pictures, photomicrography, and the making of transparencies. Students are advised as to the use of visual aids in the preparation of lectures and theses, the arrangement and co-ordination of materials, and the organization and maintenance of records and histories.

Moulage and art are used to supplement the photographic services where applicable. Drawings of anatomical, pathological, surgical and operative cases are used to teach the student detailed technics. In moulage, rubber master molds are made of gross and embryological specimens and from these are cast both plaster and wax positives. Through the use of agar molds, facial and oral masks are made of unusual and interesting clinical subjects. This work is particularly valuable in courses in which it is not possible to use actual specimens for instructional purposes.

By the combination and correlation of these various types of visual education, all departments of instruction in the School are provided with an unlimited supply of valuable and often irreplaceable materials for lectures, clinics and exhibits.

FIRST AID

Dr. Ogden

This course is offered in the Junior year for the purpose of acquainting the student with the basic principles of First Aid. Instruction consists of lectures combined with practical demonstrations.

SCHOOL OF LAW

OFFICERS OF ADMINISTRATION

H. C. BYRD, B.S., LL.D., D. Sc., *President of the University*

ROGER HOWELL, LL.B., Ph.D., *Dean*

BRIDGEWATER M. ARNOLD, LL.B., *Assistant Dean*

EDGAR F. LONG, Ph.D., *Director of Admissions*

ALMA H. PREINKERT, M.A., *Registrar*

THE FACULTY COUNCIL

BRIDGEWATER M. ARNOLD

ROGER HOWELL

RANDOLPH BARTON, JR.

HON. EMORY H. NILES

HON. W. CALVIN CHESNUT

EDWIN G. W. RUGE

HON. EDWIN T. DICKERSON

JOHN S. STRAHORN, JR.

THE FACULTY OF LAW (1948-1949)

BRIDGEWATER M. ARNOLD.....Assistant Dean and Professor of Law
A.B. (1923), Princeton University; LL.B. (1931), University of Maryland.

GEORGE O. BLOME.....Director of Practice Court
LL.B. (1914), University of Maryland.

J. WALLACE BRYAN.....Lecturer on Pleading
A.B. (1903), Ph.D. (1908), Johns Hopkins University; LL.B. (1905), University of Maryland.

JAMES T. CARTER.....Lecturer on Contracts
A.B. (1914), Oberlin College; LL.B. (1918), University of Maryland; Ph. D. (1919), Johns Hopkins University.

RICHARD W. CASE.....Lecturer on Taxation
A.B. (1941), LL.B. (1942), University of Maryland.

L. WHITING FARINHOLT, JR.....Associate Professor of Law
A.B. (1932), Johns Hopkins University; LL.B. (1940), University of Maryland; LL.M. (1947), Harvard University.

HON. ELI FRANK.....Professor Emeritus
A.B. (1894), Johns Hopkins University; LL.B. (1896), University of Maryland.

GEORGE GUMP.....Lecturer on Taxation
A.B. (1930), Johns Hopkins University; LL.B. (1933), University of Maryland.

ROGER HOWELL.....Dean and Professor of Law
A.B. (1914), Ph.D. (1917), Johns Hopkins University; LL.B. (1917), University of Maryland.

FREDERICK WILLIAM INVERNIZZI.....Associate Professor of Law
A.B. (1932), LL.B. (1935), University of Maryland.

LAURENCE M. JONES.....Professor of Law
A.B. (1930), J.D. (1932), State University of Iowa; LL.M. (1933), S.J.D. (1934), Harvard University.

JOSEPH O. KAISER.....Lecturer on Pleading
A.B. (1933), Johns Hopkins University; LL.B. (1936), University of Maryland.

- JOHN H. LEWIN.....Lecturer on Administrative Law
A.B. (1920), Johns Hopkins University; LL.B. (1923), Harvard University.
- JOHN M. MCFALL.....Lecturer on Mortgages
A.B. (1904), College of Charleston; M.A. (1906), Columbia University; LL.B. (1915),
George Washington University.
- GERALD MONSMAN.....Supervisor Legal Aid Clinic
A.B.(1926), Calvin College; LL.B. (1933), University of Maryland; J.D. (1935),
Georgetown University.
- HON. EMORY H. NILES.....Lecturer on Admiralty and Evidence
A.B. (1912), Johns Hopkins University; B.A. (1915), B.C.L. (1916), M.A. (1930),
Oxford University; LL.B. (1917), University of Maryland.
- REUBEN OPPENHEIMER.....Lecturer on Administrative Law
A.B. (1917), Johns Hopkins University; LL.B. (1921), Harvard University.
- RUSSELL R. RENO.....Professor of Law
A.B. (1931), LL.B. (1927), University of Illinois; LL.M. (1940), Columbia University.
- EDWIN G. W. RUGE.....Professor of Law
A.B. (1912), Yale University; LL.B. (1915), Harvard University.
- *G. RIDGELY SAPPINGTON.....Lecturer on Practice
LL.B. (1904), Baltimore Law School.
- JOHN S. STRAHORN, JR.....Professor of Law
A.B. (1922), St. John's College; LL.B. (1925), Washington and Lee University;
S.J.D. (1926), Harvard University; J.S.D. (1931), Yale University.
- R. DORSEY WATKINS.....Lecturer on Torts and Mortgages
A.B. (1922), Ph.D. (1925), Johns Hopkins University; LL.B. (1925), University of
Maryland.

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- GERTRUDE M. ANDERTON.....Secretary
- ANNE C. BAGBY.....Law Librarian
A.B. (1922), Goucher College; B.L.S. (1927), Pratt Institute School of Library Science.
- ETHEL LOUISE BROCKMAN.....Editorial Secretary, Maryland Law Review
A.B. (1938), LL.B. (1940), University of Maryland.
- NETTIE G. ABRAHAMS.....Stenographer

* Deceased, November 9, 1948.

SCHOOL OF LAW

Introductory Statement

The Law School of the University of Maryland is rated as an "Approved School" by the Council on Legal Education of the American Bar Association. It is also a member of the Association of American Law Schools, an organization whose purpose is the advancement of legal education, membership in which is dependent upon meeting and maintaining certain standards as to entrance requirements, faculty, library and curriculum.

It is the only school in Maryland which has been so recognized and which offers what is regarded by the bodies named as proper preparation for the practice of law or whose standards of admission and instruction are those recommended by them. In 41 jurisdictions, graduates of schools not substantially complying with those standards are not eligible to take the bar examinations; and in a substantial number of jurisdictions, recognition is now refused to law study in a school not fully approved by the American Bar Association.

The American Bar Association standards are set forth in the following resolutions, adopted in 1921, with the exception of 1 (f), which was adopted in 1938:

"(1) The American Bar Association is of the opinion that every candidate for admission to the Bar should give evidence of graduation from a law school complying with the following standards:

(a) It shall require as a condition of admission at least two years of study in a college.

(b) It shall require its students to pursue a course of three years' duration if they devote substantially all of their working time to their studies, and a longer course, equivalent to the number of working hours, if they devote only part of their working time to their studies.

(c) It shall provide an adequate library available for the use of the students.

(d) It shall have among its teachers a sufficient number giving their entire time to the school to insure actual personal acquaintance with the whole student body.

(e) It shall not be operated as a commercial enterprise and the compensation of any officer or member of its teaching staff shall not depend on the number of students or on the fees received.

(f) It shall be a school which in the judgment of the Council on Legal Education and Admissions to the Bar possesses reasonably adequate facilities and maintains a sound educational policy; provided, however, that any decision of the Council in these respects shall be subject to review by the House of Delegates on the petition of any school adversely affected.

"(2) The American Bar Association is of the opinion that graduation from a law school should not confer the right of admission to the Bar, and that every candidate should be subjected to an examination by public authority to determine his fitness.

"(3) The Council on Legal Education and Admission to the Bar is directed to publish from time to time the names of those law schools which comply with the above standards and those which do not, and to make such publications available so far as possible to intending law students."

The policy set forth in these resolutions has been consistently and vigorously adhered to in subsequent meetings of the American Bar Association.

The standards of the Association of American Law Schools are substantially the same, being somewhat more exacting in some instances.

HISTORICAL SKETCH

The General Assembly of Maryland in 1812 authorized the College of Medicine of Maryland, founded in 1807, "to constitute, appoint and annex to itself three other colleges or faculties, viz., the Faculty of Divinity, the Faculty of Law, and the Faculty of Arts and Sciences," and declared that "the four colleges or faculties thus united should be constituted an University by the same and under the title of the University of Maryland." In pursuance of this authority the University was organized in 1813, and is thus one of the oldest chartered universities in America.

The first faculty of law was chosen in 1813, when David Hoffman was elected Professor of law. He published in 1817 "A Course of Legal Study Addressed to Students and the Profession Generally," which Justice Story in an article in the *North American Review* pronounced to be "by far the most perfect system for the study of law which has ever been offered to the public," and which recommended a course of study so comprehensive as to require for its completion six or seven years. Regular instruction in law was begun in 1823, but was suspended in 1836 for lack of proper pecuniary support. Hoffman's ideals of legal education were far in advance of his times and in consequence there were but few students able or willing to spend the time required by his course. In 1869 the Law School was reorganized, and in 1870 regular instruction therein was resumed. Its graduates now number more than thirty-five hundred, and include a large proportion of the past and present leaders of the bench and bar in the State, as well as many who have attained prominence in the profession elsewhere.

Two other schools, the Baltimore Law School and the Baltimore University of Law, were organized under charters granted by the State of Maryland. These two schools were subsequently consolidated under the name of the Baltimore Law School in 1911 and in 1913 the Baltimore Law School was in turn merged into the Law School of the University of Maryland. On July 1, 1920, the University of Maryland at Baltimore

and the Maryland State College at College Park were consolidated under the name of the University of Maryland.

BUILDING AND EQUIPMENT

The buildings of the Schools of Law, Medicine, Dentistry and Pharmacy of the University of Maryland are located in the vicinity of Lombard and Greene Streets, in the City of Baltimore, the Law School building being at the southeast corner of Redwood and Greene Streets. This building was erected in 1931 and is a three-story building of colonial design, devoted exclusively to law-school purposes. The first floor contains a large auditorium, students' lounge, the administrative offices and the women's locker room; on the second floor are four large class-rooms; the third floor is devoted to the practice court, a large reading-room, and offices and reading-room for the law faculty and Law Review staff; in the basement is the men's locker room. The entire west wing of the building is devoted to stack space, affording room for more than 50,000 volumes.

The Law Library now contains some 22,000 volumes. Included therein are several complete sets of the Maryland and Baltimore City reports; all the editions, official and unofficial, of the Supreme Court reports and inferior Federal courts; the National Reporter System and the reports of the Courts of last resort of all states prior thereto, as well as the published decisions of the more important inferior state Courts; the English Law Reports since 1865 and the English Reprint and English Common Law and Chancery Reports covering the period prior to that time; the various selected case series of annotated reports; the statute law of the United States, the several states, and Great Britain, as well as multiple sets of all Maryland codes and session laws; the American Digest System, the English and Empire Digest, and multiple sets of all Maryland Digests; a large collection of carefully selected textbooks and treatises; all of the leading legal periodicals, encyclopedias, citators and other search books. The library is open on weekdays for the use of the students from 9:00 A. M. to 10:30 P. M.

ARRANGEMENT OF HOURS

The Law School is divided into two divisions, the Day School and the Evening School. The same curriculum is offered in each school, and the standards of work and graduation requirements are the same.

The normal Day School course covers a period of three years of thirty-two weeks each, exclusive of holidays.

The normal Evening School course covers a period of four years of thirty-six weeks each, exclusive of holidays. The class sessions are held on Monday, Wednesday and Friday evenings of each week from 6:30 to 9:40 o'clock, leaving the alternate evenings for study and preparation by the student.

REQUIREMENTS FOR ADMISSION

Candidates for Degree—The requirements for admission are those of the Association of American Law Schools. Applicants for admission as candidates for a degree are required to produce evidence of the completion of at least one-half of the work acceptable for a bachelor's degree granted on the basis of a four-year period of study by the State University of the State in which the prelaw work is taken, or if there is no State University, then at a principal college or university located therein; not more than ten per cent of the credit presented for admission may include credit earned in nontheory courses in military science, hygiene, domestic arts, physical education, vocal or instrumental music, or other courses without intellectual content of substantial value. *All prelegal work must have been passed with a scholastic average at least equal to the average required for graduation in the institution attended.*

The right is reserved to refuse admission to applicants with sufficient scholastic credit, whose presence in the School would, in the judgment of the Faculty Council, be detrimental to the best interests of the School.

Special Students. Candidates for Certificate of the School—A limited number of students, not exceeding ten per cent of the average number of students admitted as beginning regular law students during the two preceding years, applying for entrance with less than the academic credit required of candidates for the law degree, may be admitted as candidates for the certificate of the school, but not for the degree, where, in the opinion of the Faculty Council, special circumstances, such as the maturity and the apparent ability of the student, seem to justify a deviation from the rule requiring at least two years of college work. Applicants for admission as special students must be at least twenty-three years of age and must be specially equipped by training and experience for the study of law.

Application for admittance as a special student should be made as early as possible by letter, showing the age of the applicant, together with a detailed statement of attendance at educational institutions, and of the work therein completed and the work pursued by the applicant since leaving such educational institutions.

ADVANCED STANDING

Students complying with the requirements for admission to the school who have, in addition, successfully pursued the study of law elsewhere in a law school which, at the time of such student's attendance, was either a member of the Association of American Law Schools or approved by the Council on Legal Education of the American Bar Association may, in the discretion of the Faculty Council, upon presentation of a certificate from such accredited law school showing honorable dismissal therefrom, and the successful completion of equivalent courses therein, receive credit for such courses and be admitted to advanced standing. *No*

student transferring from another law school will be admitted who is not in good scholastic standing at the school from which he transfers. No degree will be conferred until after at least one year of residence and study at this school.

COMBINED PROGRAM OF STUDIES LEADING TO THE DEGREES OF BACHELOR OF ARTS OR BACHELOR OF SCIENCE AND BACHELOR OF LAWS

The University of Maryland offers combined programs in arts or business administration and law leading to the degrees of bachelor of arts or bachelor of science and bachelor of laws.

Students pursuing such combined programs in college and prelegal subjects will spend the first three years in either the College of Arts and Sciences or in the College of Business and Public Administration at College Park. They will then register in the Law School, and upon the successful completion of the work of the first year in the Day School, or the equivalent work in the Evening School, the degree of bachelor of arts or bachelor of science will be awarded. The degree of bachelor of laws will be awarded upon the completion of the work prescribed for graduation in the School of Law.

Details of the combined courses may be had upon application to the University of Maryland, College Park, Maryland.

REGISTRATION

All students are required, when entering for each session, to report in person at the office of the Secretary of the Law School and enroll. The attention of all students is called to the fact that no registration will be allowed except by special action of the Dean after the last day for registration as designated in the calendar.

Students who fail to pay the tuition and other fees required on or before the day of registration, for each term or semester, as stated in the catalogue, will be required to pay in addition to the fees required, a fine of five (\$5.00) dollars. The last permissible day for registration, with the fine included, is Saturday at noon of the week in which instruction begins following the specified registration period. This rule may be waived only by action of the Dean.

VETERANS' EDUCATIONAL BENEFITS

The University is approved by the Veterans Administration for participation in the program of educational benefits provided for veterans under Public Laws 346 (the Servicemen's Readjustment Act of 1944 or "GI Bill") and 16 (the Vocational Rehabilitation Act).

A veteran planning to enter law school under either of these laws should file his application with the Veterans Administration as early as possible, in order that this may be approved before the veteran begins his law studies.

FEES AND EXPENSES

The charges for instruction for resident students are as follows:

Application fee, to accompany application.....	\$ 5.00
Matriculation fee, payable on first registration.....	10.00
Diploma fee, payable upon graduation.....	15.00
Tuition fee, per semester (Day School).....	100.00
Tuition fee, per semester (Evening School).....	75.00

The tuition fee for each semester is payable at the time of registration therefor. For students unable to pay such charges in full when due, arrangements for installment payments may be made with the Secretary at the time of registration. Students carrying less than ten credit hours in the Day division or less than six credit hours in the Evening division will be charged on the basis of \$7.50 per semester hour carried.

NON-RESIDENT STUDENTS

An additional tuition fee of \$25.00 per semester must be paid by students who are non-residents of the State of Maryland.

Students who are minors are considered to be resident students if, at the time of their registration, their parents* have been residents of this State for at least one year.

Adult students are considered to be resident students if, at the time of their registration, they have been residents of this State for at least one year, provided that such residence has not been acquired while attending any school or college in Maryland.

The status of the residence of a student is determined at the time of his first registration in the University and may not thereafter be changed by him unless, in the case of a minor, his parents* move to and become legal residents of this State by maintaining such residence for at least one full calendar year. However, the right of the student (minor) to change from a non-resident to a resident status must be established by him prior to registration for a semester in any academic year.

REBATES

The matriculation fee is not subject to rebate. Other tuition charges will be rebated in case of withdrawal of a student during the course of a semester, in accordance with the following schedule:

Period From Date Instruction Begins	
2 weeks or less.....	80%
Between 2 and 3 weeks.....	60%
Between 3 and 4 weeks.....	40%
Between 4 and 5 weeks.....	20%
Over 5 weeks.....	No rebate

In all cases of withdrawals from school, immediate notice in writing must be given to the Dean.

* The term "parents" includes persons who, by reason of death or other unusual circumstances, have been legally constituted the guardians of or stand in loco parentis to such minor students.

SCHOLARSHIPS

In 1922, Mr. Louis S. Ashman, of the Baltimore Bar and an alumnus of the Law School, assigned to the Regents all royalties to be received from the publication of his book, "Prayers and Instructions" in order to provide a fund for the establishment of a scholarship or scholarships to be known as "The Louis S. Ashman Scholarship," for a student or students recommended annually by the Faculty Council as worthy to receive the same by reason of scholarly attainments and the need of financial assistance in pursuing the study of law. The value of each scholarship is about \$150.00.

At least one such scholarship has been awarded each year since, except that during the war, the Faculty Council reserved the right to withhold award of these scholarships for the benefit of students returning from service during the postwar period. Beginning with the school year 1946-1947, two of such scholarships will be awarded annually; in accordance with the donor's wishes, preference will be given to former servicemen in making such awards.

For the purpose of continuing these scholarships, Mr. Ashman in 1939 also assigned the royalties from his book on "Directed Prayers and Instructions" to the Regents; and for the same purpose has currently under preparation a book on "Maryland Court and Office Forms, Annotated."

Applications for this scholarship must be filed on or before September 1 of the school year for which the scholarship is to be awarded. Scholarships will be awarded for one year only, but the same person may receive more than one award, provided his scholastic work and influence in the School are such as to merit this.

REGISTRATION WITH THE COURT OF APPEALS AND ADMISSION TO THE BAR

Under the rules governing admission to the Bar in the State of Maryland, each applicant is required to register with the State Board of Law Examiners as a law student before beginning the study of law. Applicants for such registration must have completed, in addition to a high-school education or the equivalent, two years of work in a college approved by the Board of Law Examiners, or the equivalent. Application blanks for such registration may be procured from the Secretary by the student at the time of his registration in the Law School. A fee of \$15.00, payable to the State Board of Law Examiners must accompany each application. *Such registration as a law student with the State Board of Law Examiners does not automatically qualify an applicant for admission to the Law School, for which compliance with the requirements set forth on page 9 is essential.*

Admission to the Bar is upon examination by the State Board of Law Examiners. The examinations are held in July and March each year, and embrace the following subjects: Agency, Conflict of Laws, Constitutional Law, Contracts, Corporations, Criminal Law, Domestic Relations, Equity, Evidence, Negotiable Instruments, Personal Property, Pleading

and Practice at Law and in Equity, Administrative Law Including Public Service Companies, Real Property, Torts, and Testamentary Law. All of the required courses are included in the curriculum offered by the Law School.

Applicants for admission to the bar must have studied law in the office of a member of the bar of this State, or in a law school of the United States and must file a petition with the State Board of Law Examiners at least twenty days before the day fixed for the examination they wish to take. A fee of \$25.00, payable to the State Board of Law Examiners, must accompany each application.

Further information concerning the examination or matters relating to admission to the bar may be had upon application to Mr. Wilson K. Barnes, Secretary, State Board of Law Examiners, 900 Maryland Trust Building, Baltimore 2, Maryland.

EXAMINATIONS AND GRADES

Written examinations are held at the end of the course in all subjects except Practice Court and the Legal Aid Clinic. Unless excused by the Dean, all students must present themselves for examination in each subject for which they are registered at the first regular examination held therein in order to receive credit for such course. No student will be permitted to take the examination in any course unless he has attended at least 85 per cent of the lectures therein, except upon the recommendation of the instructor in such course and by permission of the Dean; nor may any student, without special permission from the Dean, carry in the Day School less than 12 nor more than 16 hours per week and, in the Evening School, less than 6 nor more than 10 hours per week.

A student failing to present himself for examination in any course must report to the Dean as soon as the circumstances which caused the absence will permit. If the Dean is satisfied that the absence was justifiable (as if due to sickness or other exceptional circumstances) he will give permission for a deferred examination in place of the one missed. A fee of \$5.00 will be charged for every deferred examination, except that one fee will cover all deferred examinations due to the same cause.

The following grade symbols are used: A, signifying "excellent"; B, signifying "very good"; C, signifying "good"; D, signifying "passed"; F, signifying "failure"; I, signifying "incomplete." Of these, A, B, C, and D, are passing grades, but a grade of D can be counted toward graduation only as hereinafter stated. For the purpose of computing the average grade of a student, the following values are assigned to the grades received: A equals 4; B equals 3; C equals 2; D equals 1; F equals 0.

The grade of I (incomplete) is given only to those students who have a proper excuse for failure to present themselves for examinations or to complete any other work that may be required by the instructor in any course. It is not used to signify work of inferior quality. It may be replaced later by a definite grade for the course, when the instructor therein is prepared to report it.

A student receiving a grade of less than C in any course, may, in the discretion of the instructor, take a re-examination therein, for the purpose of raising such grade, the grade received on such re-examination to be substituted for the original grade received, except with respect to eligibility for scholarship honors. Such re-examination, unless special permission is obtained from the Dean to the contrary, must be taken either at the next regular examination given in such course, or at the next deficiency examination period. Deficiency examinations are held prior to the opening of the school session in September of each year. Not more than one re-examination may be taken in any one course; if a student is not successful in raising his grade thereon, he may do so thereafter only by repeating such course.

In determining the eligibility of a student to continue in attendance at the school, a grade of F in a course of three or more semester hours shall constitute one failure, and a grade of F in a course of less than three semester hours shall constitute a half-failure. A student having three or more failures, so computed, is permanently excluded from the School and is not permitted to take re-examinations in the courses failed.

A student having less than three failures, so computed, and a weighted average below C, will be required to take deficiency examinations in the subjects failed; if on such deficiency examinations, he shall remove all failures and half-failures, he may continue with his class, subject to the conditions as to number of hours of D grades stated hereafter. If, after taking such deficiency examinations, he still is not eligible to continue with his class, he must elect either (1) to withdraw from the School; or (2) to remain as an unclassified student taking assigned work only. A student with a weighted average of at least C, who has a mark of F in not more than one subject, shall be entitled to continue with his class without removing such failure by re-examination.

Except in the case of a student whose weighted average is at least C, students with the number of hours of D grades following on their records shall be ineligible to continue into the succeeding class, except after reducing such hours of D grades sufficiently by taking deficiency examinations: a first-year day student with more than nine semester hours; a second-year day student with more than fifteen semester hours; a first-year evening student with more than eight semester hours; a second-year evening student with more than twelve semester hours; a third-year evening student with more than sixteen semester hours. If, after taking such deficiency examinations, such a student is still not eligible to continue with his class, he must elect either (1) to withdraw from the School; or (2) to remain as an unclassified student taking assigned work only.

The Faculty Council reserves the right to require the withdrawal of any student whose continued presence would not, in the judgment of the Council, either because of low scholastic standing or other reasons, be of benefit to himself or would be detrimental to the best interests of the School.

REQUIREMENTS FOR GRADUATION

To be eligible for either the degree or the certificate, a student must have successfully completed courses totaling at least 80 semester hours, in at least three-fourths of which he must have received a grade of C or higher; provided, however, that a student who has failed in not more than one subject, may be allowed to graduate if his general weighted average, including such failure, is at least C.

HONORS AND PRIZES

A student who complies with the requirements for graduation and who attains in all work done in courses offered in the school, and presented for the degree, an average grade of not less than 3.15, may be recommended by the Faculty Council for Graduation with Honor.

Under the will of Mrs. W. Calvin Chesnut, the sum of \$1,000.00 was paid to the Regents of the University as an endowment, the annual income to be used for the purpose of giving a prize for good scholarship in a broad sense, to be determined by the Dean of the School of Law annually, to be known as the Elizabeth Maxwell Carroll Chesnut Prize.

The G. Ridgely Sappington Prize, established in memory of G. Ridgely Sappington, for many years a member of the Faculty of the School of Law, is awarded annually to the student doing the best work in the day division course in Practice, in which Mr. Sappington was the instructor at the time of his death.

The editors of the United States Law Week offer a prize of a year's subscription to the student who, in the judgment of the faculty, makes the most satisfactory scholastic progress during his final school year.

ORDER OF THE COIF

The Order of the Coif is a national law-school honor society, founded to encourage scholarship and to advance the ethical standards of the legal profession, membership in which depends upon high scholastic attainments. Only those students standing among the first tenth of the senior class are eligible for membership. Elections of seniors to the Maryland Chapter of the Order are held during the last semester of the school year.

CURRICULUM

Explanation of Abbreviations—In the list of courses given below, the credit value of each course is indicated in semester units by a numeral per week, or its equivalent, throughout one term of the academic year, in parentheses following the title. A unit is one hour of classroom work based on the length of the day-school course. The session during which a course is given is shown as follows: I, Fall Semester; II, Spring Semester; Yr., throughout the year. Courses starred are elective; all others required.

The Faculty Council reserves the right to make such changes in the curriculum as may be found necessary or desirable. Books listed as used in any course are also subject to change as decided by the instructor.

DAY SCHOOL

First Year

- Agency (2) I—Seavey's Cases on Agency. Mr. Ruge.
- Contracts (6) Yr.—Williston's Cases on Contracts (4th ed.) Mr. Ruge.
- Criminal Law (3) I—Hall and Glueck's Cases and Materials on Criminal Law. Mr. Strahorn.
- Domestic Relations (2) II—Madden and Compton's Cases on Domestic Relations. Mr. Strahorn.
- Legal Bibliography (1) II—Brandt, How to Find the Law (3rd ed.). Mr. Reno.
- Personal Property (2) I—Fraser's Cases on Property, Vol. II (2nd ed.). Mr. Reno.
- Pleading (3) II—Common law pleading with special reference to Maryland procedure. Keigwin's Cases on Common Law Pleading (2nd ed.); mimeographed material. Mr. Bryan.
- Real Property I (3) II—Bigelow, Introduction to the Law of Real Property; Fraser's Cases on Property, Vol. I and Vol. II (2nd ed.). Mr. Reno.
- Torts (6) Yr.—Thurston and Seavey's Cases on Torts. Mr. Jones.

Second Year

- *Admiralty (2) II—Robinson on Admiralty. Judge Niles.
- Corporations (4) Yr.—Richard's Cases on Corporations (Rev. 3rd ed.). Mr. Ruge.
- Equity (4) II—Cook's Cases on Equity (4th ed.). Mr. Howell.
- Equity Pleading (2) II—Selected Material. Mr. Invernizzi.
- Evidence (4) II—McCormick's Cases on Evidence (2nd ed.). Mr. Strahorn.
- *Insurance (2) I—Vance's Cases on Insurance (3rd ed.). Mr. Jones.
- Negotiable Instruments (3) I—Britton's Cases on Bills and Notes (3rd ed.). Mr. Invernizzi.
- *Partnership (2) I—Crane and Magruder's Cases on Partnership (Shorter Selection). Mr. Arnold.
- Practice (2) I—Trial and appellate practice and procedure with special reference to Maryland procedure. McBaine's Cases on Civil Procedure (2nd ed.). Mr. Invernizzi.
- Real Property II (4) I—Kirkwood's Cases on Conveyances (2nd ed.). Mr. Reno.
- Sales (3) I—Williston and McCurdy's Cases on Sales. Mr. Arnold.
- Testamentary Law (2) II—Mechem and Atkinson's Cases on Wills and Administration (3rd ed.). Mr. Invernizzi.

Third Year

- ***Admiralty** (2) II—Robinson on Admiralty. Judge Niles.
- ***Administrative Law** (3) II—Stason's Cases on Administrative Tribunals (2nd ed.). Mr. Oppenheimer.
- ***Conflict of Laws** (4) I—Cheatham, Dowling, Goodrich and Griswold's Cases on Conflict of Laws (2nd ed.) and Supplement. Mr. Farinholt.
- ***Constitutional Law** (4) I—Dodd's Cases on Constitutional Law (3rd ed.) and Supplement. Mr. Howell.
- ***Creditor's Rights** (4) II—Hanna and McLaughlin's Cases on Creditors' Rights (3rd ed.). Mr. Arnold.
- ***Federal Jurisdiction and Procedure** (2) I—McCormick & Chadbourn's Cases on Federal Courts. Mr. Farinholt.
- ***Insurance** (2) I—Vance's Cases on Insurance (3rd ed.). Mr. Jones.
- ***Labor Law** (3) II—Cox's Cases on Labor Law. Mr. Farinholt.
- ***Legal Aid Clinic** (2)—Students registering for this course work two afternoons a week during one semester at the Baltimore Legal Aid Bureau. Limited to eight students in each semester. Mr. Monsman.
- ***Mortgages** (2) II—Walsh and Simpson's Cases on Security, Vol. II Mr. Arnold.
- ***Partnership** (2) I—Crane and Magruder's Cases on Partnership (Shorter Selection). Mr. Arnold.
- Practice Court and Legal Ethics** (4) Yr.—Selected material. Mr. Blome.
- ***Real Property III** (3) I—Simes' Cases on Future Interests. Mr. Jones.
- ***Taxation** (4) I—Griswold's Cases on Federal Taxation (2nd ed.). Mr. Gump.
- ***Trusts** (3) II—Scott's Cases on Trusts (3rd ed.). Mr. Farinholt.

EVENING SCHOOL

First Year

- Contracts** (5) Yr.—Shepherd's Cases on Contracts (2nd ed.). Mr. Carter.
- Criminal Law** (3) I—Hall and Glueck's Cases and Materials on Criminal Law. Mr. Strahorn.
- Domestic Relations** (2) II—Madden and Compton's Cases on Domestic Relations. Mr. Strahorn.
- Legal Bibliography** (1) II—Brandt, How to Find the Law (3rd ed.). Mr. Jones.
- Personal Property** (2) I—Fraser's Cases on Property, Vol. II (2nd ed.) Mr. Reno.

Real Property I (3) II—Bigelow, Introduction to the Law of Real Property; Fraser's Cases on Property, Vol. I and Vol. II (2nd ed.). Mr. Reno.

Torts (5) Yr.—Thurston and Seavey's Cases on Torts. Mr. Watkins.

Second Year

Agency (2) I—Seavey's Cases on Agency. Mr. Ruge.

Equity (4) II—Cook's Cases on Equity (4th ed.). Mr. Howell.

Negotiable Instruments (3) I—Britton's Cases on Bills and Notes (3rd ed.). Mr. Invernizzi.

Pleading (3) II—Common law pleading with special reference to Maryland procedure. Keigwin's Cases on Common Law Pleading (2nd ed.); mimeographed material. Mr. Kaiser.

Real Property II (4) Yr.—Kirkwood's Cases on Conveyances (2nd ed.). Mr. Reno.

Sales (3) I—Williston and McCurdy's Cases on Sales. Mr. Arnold.

Testamentary Law (2) II—Mechem and Atkinson's Cases on Wills and Administration (3rd ed.). Mr. Invernizzi.

Third Year

***Admiralty (2) II**—Robinson on Admiralty. Judge Niles.

Corporations (4) II—Richard's Cases on Corporations (Rev. 3rd ed.). Mr. Ruge.

***Creditors' Rights (4) II**—Hanna and McLaughlin's Cases on Creditors' Rights (3rd ed.). Mr. Arnold.

Equity Pleading (2) II—Selected material. Mr. Invernizzi.

Evidence (4) I—McCormick's Cases on Evidence (2nd ed.). Judge Niles.

***Insurance (2) II**—Vance's Cases on Insurance (3rd ed.). Mr. Jones.

***Mortgages (2) I**—Walsh and Simpson's Cases on Security, Vol. II. Mr. McFall.

Practice (2) I—Trial and appellate practice and procedure with special reference to Maryland procedure. McBaine's Cases on Civil Procedure (2nd ed.). Mr. Invernizzi.

***Real Property III (3) I**—Simes' Cases on Future Interests. Mr. Jones.

Fourth Year

***Administrative Law (3) II**—Stason's Cases on Administrative Tribunals (2nd ed.). Mr. Lewin.

***Admiralty (2) II**—Robinson on Admiralty. Judge Niles.

***Conflict of Laws (4) I**—Cheatham, Dowling, Goodrich and Griswold's Cases on Conflict of Laws (2nd ed.) and Supplement. Mr. Farinholt.

- *Constitutional Law (4) I—Dodd's Cases on Constitutional Law (3rd ed.) and Supplement. Mr. Howell.
- *Insurance (2) II—Vance's Cases on Insurance (3rd ed.). Mr. Jones.
- Practice Court and Legal Ethics (4) Yr.—Selected material. Mr. Blome.
- *Taxation (4) Yr.—Griswold's Cases on Federal Taxation (2nd ed.). Mr. Case.
- *Trusts (3) II—Scott's Cases on Trusts (3rd ed.). Mr. Farinholt.

PRACTICE COURT

The Law School endeavors not only to equip its students with an accurate knowledge of legal principles, but also to train them in the application of that knowledge and to fit them for the practice of the law. To that end special care and thought are devoted to the conduct of the Practice Court, which is in session throughout the scholastic year.

The work of the Practice Court is designed to afford opportunity not only for the argument of law questions, but also for preparation and conduct of a case through all its stages, as nearly as possible in accordance with the procedure in actual trial work. Three features are especially emphasized, viz.: the drawing of pleadings, the writing of briefs, and the oral argument of questions of law.

A set of Court Rules has been adopted in accordance with which the students are required to prepare and file their pleadings and conduct their cases. Students are furnished with statements of facts, involving debatable principles of law, supposed to represent the claims of the respective parties to the litigation, from which they draft the necessary pleadings and prepare their cases for trial. They are also required to prepare and file trial briefs and appeal briefs.

The course is given in the third year of the Day School and the fourth year of the Evening School. In connection with the course instruction in Legal Ethics is offered. Except as herein otherwise provided, the course is required for graduation and attendance at all sessions of the Court by members of those classes is compulsory. Except by permission of the Dean, no student will receive credit for work in the Practice Court unless he has attended at least 85 per cent of the sessions each year. There is no examination in this course, the grade of the student being based upon the work done in the Court. The grade thus attained by the student is treated in the same manner as the grade given on examination in other subjects, and the successful completion of the course gives the student credit toward his degree.

LEGAL AID CLINIC

By arrangement with the Baltimore Legal Aid Bureau, selected senior students, not exceeding eight in any one semester, may substitute one semester's work at the Legal Aid Bureau for one semester of the Practice Court. Students taking clinic work are required to spend two after-

noons a week at the Legal Aid Bureau, working under the supervision of a member of the Bureau staff. The work includes consultation with clients, interviews with witnesses, preparation of memoranda, examination of records of various kinds, and in general such work as a clerk in a general law office would be called upon to perform.

MARYLAND LAW REVIEW

The Maryland Law Review, appearing quarterly, is published by the Law School with the support and cooperation of the Maryland State Bar Association, the Bar Association of Baltimore City, and the Junior Bar Association of Baltimore City. *The Review* is devoted primarily to the discussion of Maryland law and of questions regarded as of particular interest to Maryland lawyers. Members of the Law School faculty serve as Faculty Editor and Assistant Editor and Business Manager; there is also a Student Editorial Board composed of students selected on the basis of scholarship. Members of the Student Editorial Board may, upon the recommendation of the Faculty Editor of the *Law Review*, receive semester hour credit toward the degree of Bachelor of Laws, not to exceed a total of 4 semester hours and not to exceed 2 semester hours in any one year. Such credit may be substituted, *pro tanto*, for work in Practice Court. Selection for the Student Editorial Board is an honor, and an opportunity for training of high value in legal research. The governing Board of Trustees consists of a representative from the State Judiciary, representatives of the Bar Associations, the Dean of the Law School, and the Faculty Editor and Business Manager.

STUDENT COUNCIL

The Student Council is a student organization functioning as a coordinating agency between the student body, the school administration and the faculty. Members are elected by vote of their respective classes; there is also a faculty advisor appointed by the Dean.

SCHOOL of MEDICINE

FACULTY OF MEDICINE

EMERITI

- J. FRANK CROUCH, M.D. . . . Professor of Clinical Ophthalmology and Otolaryngology, Emeritus
HARRY FRIEDENWALD, A.B., M.D., D.H.L., D.Sc. . . . Professor of Ophthalmology, Emeritus
J. M. H. ROWLAND, M.D., D.Sc., LL.D. . . . Professor of Obstetrics, Emeritus; Dean, Emeritus
J. DAWSON REEDER, M.D. . . . Professor of Proctology, Emeritus⁵
HENRY J. WALTON, M.D. . . . Professor of Roentgenology, Emeritus
PAGE EDMUNDS, M.D. . . . Professor of Traumatic Surgery, Emeritus
RUTH LEE BRISCOE . . . Librarian, Emeritus
ALBERTUS COTTON, M.A., M.D. . . . Professor of Orthopaedic Surgery, and Roentgenology, Emeritus
JOSEPH E. GICHNER, M.D. . . . Professor of Clinical Medicine and Physical Therapeutics, Emeritus^{5a}
HARVEY G. BECK, M.D., D.Sc. . . . Professor of Clinical Medicine, Emeritus
IRVING J. SPEAR, M.D. . . . Professor of Neurology, Emeritus
CARL L. DAVIS, M.D. . . . Professor of Anatomy, Emeritus
ARTHUR M. SHIPLEY, M.D., D.Sc. . . . Professor of Surgery, Emeritus
CLYDE A. CLAPP, M.D. . . . Professor of Ophthalmology, Emeritus
ANDREW C. GILLIS, M.A., M.D., LL.D. . . . Professor of Neurology, Emeritus

FACULTY BOARD

DEAN H. BOYD WYLLIE, *Chairman*
O. G. HARNE, *Secretary*

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| WILLIAM R. AMBERSON | JACOB E. FINESINGER | EDWARD A. LOOPER |
| FRANKLIN B. ANDERSON | A. H. FINKELSTEIN | WILLIAM S. LOVE, JR. |
| JAMES G. ARNOLD, JR. | LEON FREEDOM | JOHN F. LUTZ |
| WALTER A. BAETJER | EDGAR B. FRIEDENWALD | STANLEY H. MACHT |
| CHARLES BAGLEY, JR. | THOMAS K. GALVIN | CHARLES W. MAXSON |
| J. EDMUND BRADLEY | MOSES GELLMAN | ZACHARIAH MORGAN |
| OTTO C. BRANTIGAN | FRANK W. HACHTEL | THEODORE H. MORRISON |
| HOWARD M. BUBERT | EDWARD J. HERBST | ALFRED T. NELSON |
| T. NELSON CAREY | CYRUS F. HORINE | EMIL NOVAK |
| C. JELLEFF CARR | J. MASON HUNDLEY, JR. | THOMAS R. O'ROURK |
| THOMAS R. CHAMBERS | ELLIOTT H. HUTCHINS | C. W. PEAKE |
| CARL DAME CLARKE | EDWARD S. JOHNSON | D. J. PESSAGNO |
| PAUL W. CLOUGH | F. L. JENNINGS | H. R. PETERS |
| RICHARD G. COBLENTZ | C. LORING JOSLIN | MAURICE C. PINCOFFS |
| BEVERLEY C. COMPTON | WALTER L. KILBY | J. MORRIS REESE |
| CHARLES N. DAVIDSON | EDWARD A. KITLOWSKI | CHARLES A. |
| LOUIS H. DOUGLASS | VERNON E. KRAHL | REIFSCHEIDER |
| C. REID EDWARDS | JOHN C. KRANTZ, JR. | DEXTER L. REIMANN |
| MONTE EDWARDS | LOUIS A. M. KRAUSE | HARRY M. ROBINSON, SR. |
| FREDERICK P. FERGUSON | KENNETH D. LEGGE | HARRY L. ROGERS |
| FRANK H. J. FIGGE | R. W. LOCHER | |

⁵ Died Nov. 18, 1948.

^{5a} Died March 8, 1949.

MILTON S. SACKS
EMIL G. SCHMIDT
ANDREW G. SMITH
DIETRICH C. SMITH
R. DALE SMITH
WILLIAM H. SMITH
HUGH R. SPENCER
THOMAS P. SPRUNT

EDWARD STEERS
W. HOUSTON TOULSON
EDUARD UHLENHUTH
HENRY F. ULLRICH
ALLEN F. VOSHELL
JOHN A. WAGNER
GRANT E. WARD
C. GARDNER WARNER

HUNTINGTON WILLIAMS
WALTER D. WISE
THEODORE E. WOODWARD
THOMAS C. WOLFF
ROBERT B. WRIGHT
GEORGE H. YEAGER
WAITMAN F. ZINN

EXECUTIVE COMMITTEE OF THE FACULTY

DEAN H. BOYD WYLIE, *Chairman*

O. G. HARNE, *Secretary*

J. EDMUND BRADLEY
T. NELSON CAREY
LOUIS H. DOUGLASS
CHARLES REID EDWARDS

JACOB E. FINESINGER
FRANK W. HACHTEL
J. MASON HUNDLEY, JR.
EMIL G. SCHMIDT

HUGH R. SPENCER

FACULTY OF MEDICINE

PROFESSORS

Myron S. Aisenberg, D.D.S., Professor of Pathology, School of Dentistry.
William R. Amberson, Ph.D., Professor of Physiology, and Head of the Department.
Charles Bagley, Jr., M.A., M.D., Professor of Neurological Surgery.
Joseph C. Biddix, Jr., D.D.S., Professor of Oral Diagnosis, School of Dentistry.²
J. Edmund Bradley, M.D., Professor of Pediatrics, and Head of the Department.²
Otto C. Brantigan, B.S., M.D., Professor of Surgical Anatomy, and Professor of Clinical Surgery.
T. Nelson Carey, M.D., Professor of Clinical Medicine and Chairman of the Department of Medicine.
Ross McC. Chapman, M.D., Professor of Psychiatry.⁵
Richard G. Coblentz, M.A., M.D., Professor of Clinical Surgery.
Edward C. Dobbs, D.D.S., Professor of Pharmacology, School of Dentistry.²
Brice M. Dorsey, D.D.S., Professor of Oral Surgery, School of Dentistry.
Louis H. Douglass, M.D., Professor of Obstetrics, and Head of the Department.
Charles Reid Edwards, M.D., Professor of Surgery, and Acting Head of the Department.
Monte Edwards, M.D., Clinical Professor of Surgery and Professor of Proctology.

It is to be noted that for convenience of reference the names of the members of the Faculty are listed in the forepart of this catalogue in alphabetical order. The names are listed in order of seniority under each preclinical and clinical department of the school on subsequent pages.

On the lists of the Faculty of Medicine and Fellows and the Hospital and Dispensary staffs are given the names and positions assigned during the period July 1, 1948 to June 30, 1949 unless otherwise indicated. Changes are noted as follows:

¹ Appointments effective July 1, 1949.

² Promotion effective July 1, 1949.

³ Resigned.

⁴ Retired.

⁵ Died Sept. 24, 1948.

⁶ On leave.

- Ray Ehrensberger, Ph.D., Professor of Speech, College of Arts and Sciences.¹
 Frank H. J. Figge, Ph.D., Professor of Anatomy.⁶
 Jacob E. Finesinger, M.D., Professor of Psychiatry, and Head of the Department.^{1b}
 H. K. Fleck, M.D., Clinical Professor of Ophthalmology.⁴
 Edgar B. Friedenwald, M.D., Professor of Clinical Pediatrics.
 Thomas K. Galvin, M.D., Clinical Professor of Gynecology.
 Grason W. Gaver, D.D.S., Professor of Dental Prosthetics, School of Dentistry.
 Andrew C. Gillis, M.A., M.D., LL.D., Professor of Neurology.^{4a}
 Frank W. Hachtel, M.D., Professor of Bacteriology, and Head of the Department.
 Harry C. Hull, M.D., Professor of Clinical Surgery.
 J. Mason Hundley, Jr., M.A., M.D., Professor of Gynecology, and Head of the Department.
 Elliott H. Hutchins, M.A., M.D., Professor of Surgery.
 F. L. Jennings, M.D., Professor of Clinical Surgery.
 C. Loring Joslin, M.D., Professor of Pediatrics.
 Walter L. Kilby, M.D., Professor of Roentgenology, and Head of the Department.
 Edward A. Kitlowski, A.B., M.D., Clinical Professor of Plastic Surgery.
 John C. Krantz, Jr., Ph.D., D.Sc., Professor of Pharmacology, and Head of the Department.
 Louis A. M. Krause, M.D., Professor of Clinical Medicine.
 Kenneth D. Legge, M.D., Professor of Clinical Genito-Urinary Surgery.
 G. Carroll Lockard, M.D., Professor of Clinical Medicine.⁵
 Edward A. Looper, M.D., D.Oph., Professor of Rhinology and Laryngology.
 Theodore H. Morrison, M.D., Clinical Professor of Gastro-Enterology.
 Ernest B. Nuttall, D.D.S., Professor of Crown and Bridge, School of Dentistry.
 Thomas R. O'Rourke, M.D., Clinical Professor of Otolaryngology, Associate Professor of Rhinology and Laryngology.
 D. J. Pessagno, A.B., M.D., Professor of Clinical Surgery.
 H. Raymond Peters, A.B., M.D., Professor of Clinical Medicine
 Maurice C. Pincoffs, B.S., M.D., Professor of Medicine, and Head of the Department.
 Kyrle W. Preis, D.D.S., Professor of Orthodontics, School of Dentistry.¹
 Kenneth V. Randolph, D.D.S., Professor of Operative Dentistry, School of Dentistry.
 Charles A. Reifschneider, M.D., Clinical Professor of Traumatic Surgery.
 Harry L. Rogers, M.D., Clinical Professor of Orthopaedic Surgery.
 Harry M. Robinson, Sr., M.D., Professor of Dermatology.
 Emil G. Schmidt, Ph.D., LL.B., Professor of Biological Chemistry, and Head of the Department.
 Dietrich Conrad Smith, Ph.D., Professor of Physiology.²
 Hugh R. Spencer, M.D., Professor of Pathology, and Head of the Department.
 Thomas P. Sprunt, A.B., M.D., Professor of Clinical Medicine.
 W. Houston Toulson, M.Sc., M.D., Professor of Genito-Urinary Surgery.
 Ralph P. Truitt, M.D., Professor of Clinical Psychiatry, and^{1a} Chairman of the Department.³
 Eduard Uhlenhuth, Ph.D., Professor of Anatomy, and Head of the Department.

^{1a} Appointment effective Oct. 21, 1948.

^{1b} Appointment effective May 10, 1949.

^{1c} Appointment effective Sept. 1, 1949.

² Resignation effective July 1, 1949.

³ Retired Oct. 2, 1948.

⁴ Died August 7, 1949.

⁵ On leave (part time) Feb. 1, to May 31, 1949.

Allen Fiske Voshell, A.B., M.D., Professor of Orthopaedic Surgery.
 Huntington Williams, M.D., Dr. P.H., Professor of Hygiene and Public Health.
 Walter D. Wise, M.D., Professor of Surgery.
 George H. Yeager, B.S., M.D., Professor of Clinical Surgery.
 Waitman F. Zinn, M.D., Clinical Professor of Rhinology and Laryngology

ASSOCIATE PROFESSORS

Franklin B. Anderson, M.D., Associate Professor of Rhinology and Laryngology, and Otolaryngology.
 Merle Ansberry, Ph.D., Associate Professor of Speech, College of Arts and Sciences.¹
 James G. Arnold, Jr., M.D., Associate Professor of Neurological Surgery.
 Walter A. Baetjer, A.B., M.D., Associate Professor of Medicine.
 H. M. Bubert, M.D., Associate Professor of Medicine.
 C. Jelleff Carr, Ph.D., Associate Professor of Pharmacology.
 Thomas R. Chambers, A.B., M.D., Associate Professor of Surgery.
 Carl Dame Clarke, Associate Professor of Art as Applied to Medicine.
 Paul W. Clough, B.S., M.D., Associate Professor of Medicine.
 Charles N. Davidson, M.D., Associate Professor of Roentgenology.
 Ross Davies, M.D., Associate Professor of Hygiene and Public Health.
 J. S. Eastland, M.D., Associate Professor of Medicine.
 A. H. Finkelstein, M.D., Associate Professor of Pediatrics.
 Leon Freedom, M.D., Associate Professor of Neurology, and Associate in Pathology.
 Moses Gellman, B.S., M.D., Associate Professor of Orthopaedic Surgery.
 Lewis P. Gundry, M.D., Associate Professor of Medicine.²
 O. G. Harne, Associate Professor of Anatomy, and Asst. to the Dean.
 Hugh H. Hicks, D.D.S., Associate Professor of Periodontology,² School of Dentistry.
 Horace Hodes, M.D., Associate Professor of Hygiene and Public Health.
 Cyrus F. Horine, M.D., Associate Professor of Surgery.
 Albert Jaffe, M.D., Associate Clinical Professor of Pediatrics.
 Edward S. Johnson, M.D., Associate Professor of Surgery.
 Vernon E. Krahl, B.S., M.S., Ph.D., Associate Professor of Anatomy.
 Frederick T. Kyper, M.D., D.Sc., Associate Professor of Rhinology, Laryngology and Bronchoscopy. Instructor in Otolaryngology.²
 R. W. Locher, M.D., Associate Professor of Clinical Surgery.
 William S. Love, Jr., A.B., M.D., Associate Professor of Medicine.
 Howard J. Maldeis, M.D., Associate Professor of Legal Medicine and Associate in Pathology.⁵
 Charles W. Maxson, M.D., Associate Professor of Surgery.
 Walter C. Merkel, A.B., M.D., Associate Professor of Pathology.
 Samuel Morrison, A.B., M.D., Associate Professor of Medicine², Associate Professor of Gastro-enterology.¹
 James W. Nelson, M.D., Associate Professor of Surgery.²
 H. Whitman Newell, M.D., Associate Professor of Psychiatry.
 Emil Novak, A.B., M.D., D.Sc., Associate Professor of Obstetrics.
 C. W. Peake, M.D., Associate Professor of Surgery.
 J. Morris Reese, M.D., Associate Professor of Obstetrics.
 Dexter L. Reimann, B. S., M.D., Associate Professor of Pathology.¹
 Benjamin S. Rich, A.B., M.D., Associate Professor of Rhinology and Laryngology, Associate in Otolaryngology.

⁵ Died January 15, 1949.

Milton S. Sacks, M.D., Associate Professor of Medicine and Head of Clinical Pathology,
Associate in Pathology.
 Frederick B. Smith, M.D., Associate Clinical Professor of Pediatrics.
 R. Dale Smith, Ph. D., Associate Professor of Anatomy.²
 Edward Steers, Ph.D., Associate Professor of Bacteriology.¹
 Lewis C. Toomey, D.D.S., Associate Professor of Oral Surgery, School of Dentistry.¹
 I. Ridgeway Trimble, M.D., Associate Professor of Surgery.²
 William H. Smith, M.D., Associate Professor of Clinical Medicine.
 Henry F. Ullrich, M.D., D.Sc., Associate Professor of Orthopaedic Surgery.
 John A. Wagner, B.S., M.D., Associate Professor of Pathology.²
 W. Wallace Walker, M.D., Associate Professor of Surgery and Surgical Anatomy.²
 Grant E. Ward, A.B., M.D., Associate Professor of Surgery and Oral Surgery.
 C. Gardner Warner, A.B., M.D., Associate Professor of Pathology.
 William H. F. Warthen, A.B., M.D., Associate Professor of Hygiene & Public Health.
 Glenn S. Weiland, Ph.D., Associate Professor of Biochemistry.³
 Thomas C. Wolf, M.D., Associate Professor of Medicine, and Head of Physical Diagnosis.
 Theodore E. Woodward, M.D., Associate Professor of Medicine
 Robert B. Wright, B.S., M.D., Associate Professor of Pathology.

ASSISTANT PROFESSORS

Thurston R. Adams, M.D., Assistant Professor of Surgery and Proctology.
 Donald J. Barnett, M.D., Assistant Professor of Roentgenology.¹
 H. F. Bongardt, M.D., Assistant Professor of Surgery.
 Leo Brady, A.B., M.D., Assistant Professor of Gynecology.
 Simon H. Brager, M.D., Assistant Professor of Surgery and Proctology.
 Beverley C. Compton, A.B., M.D., Assistant Professor of Gynecology.²
 Ernest I. Cornbrooks, Jr., A.B., M.D., Assistant Professor of Gynecology.²
 Edward F. Cotter, M.D., Assistant Professor of Medicine, Associate in Neurology
 J. G. N. Cushing, M.D., Assistant Professor of Psychiatry.
 William K. Diehl, M.D., Assistant Professor of Gynecology.²
 Everett S. Diggs, B.S., M.D., Assistant Professor of Gynecology.²
 John S. Dumler, B.S., M.D., Assistant Professor of Gynecology.²
 William W. Elgin, M.D., Assistant Professor of Psychiatry.
 Francis A. Ellis, A.B., M.D., Assistant Professor of Dermatology.
 Maurice Feldman, M.D., Assistant Professor of Gastro-Enterology.
 Frederick P. Ferguson, Ph.D., Assistant Professor of Physiology.¹
 Jerome Fineman, M.D., Assistant Professor of Pediatrics.²
 Wetherbee Fort, M.D., Assistant Professor of Medicine.
 Frank J. Geraghty, M.D., Assistant Professor of Medicine.
 Francis W. Gillis, M.D., Assistant Professor of Genito-Urinary Surgery.
 Samuel S. Glick, M.D., Assistant Professor of Pediatrics.
 Harry Goldsmith, M.D., Assistant Professor of Psychiatry.
 Albert E. Goldstein, M.D., Assistant Professor of Pathology.
 George Govatos, A.B., M.D., Assistant Professor of Surgery.²
 Edward J. Herbst, Ph.D., Assistant Professor of Biological Chemistry.¹
 John F. Hogan, M.D., Assistant Professor of Genito-Urinary Surgery.²
 Harry K. Iwamota, Ph.D., Assistant Professor of Pharmacology.
 D. Frank Kaltreider, A.B., M.D., Assistant Professor of Obstetrics.³
 Fayne A. Kayser, M.D., Assistant Professor of Rhinology and Laryngology.¹

- F. Edwin Knowles, Jr., M.D., Assistant Professor of Ophthalmology and Chairman of the Department.²
- H. Vernon Langeluttig, M.D., Assistant Professor of Medicine.
- Philip L. Lerner, M.D., Assistant Professor of Neurology.
- Hans W. Loewald, M.D., Assistant Professor of Psychiatry.
- John F. Lutz, A.B., M.D., Assistant Professor of Anatomy.
- Stanley H. Macht, B.S., M.D., Assistant Professor of Roentgenology.
- Howard B. Mays, M.D., Assistant Professor of Genito-Urinary Surgery and Instructor in Pathology.
- W. Raymond McKinsey, M.D., Assistant Professor of Rhinology and Laryngology.²
- Zachariah Morgan, M.D., Assistant Professor of Gastro-Enterology.
- Harry M. Murdock, B.S., M.D., Assistant Professor of Psychiatry.
- George McLean, M.D., Assistant Professor of Medicine.
- Alfred T. Nelson, M.D., Assistant Professor of Anesthesiology, and Chairman of the Department.
- M. Alexander Novey, A.B., M.D., Assistant Professor of Obstetrics.⁵
- Wilber O. Ramsey, D.D.S., Assistant Professor of Clinical Dental Prosthesis, School of Dentistry.¹
- I. O. Ridgely, M.S., M.D., Assistant Professor of Surgery.
- William F. Rienhoff, M.D., Assistant Professor of Surgery.²
- Harry M. Robinson, Jr., B.S., M.D., Assistant Professor of Dermatology, Associate in Medicine.
- Irving Rothchild, Ph.D., Assistant Professor of Physiology.^{2a}
- John E. Savage, B.S., M.D., Assistant Professor of Obstetrics.
- Kathryn L. Schultz, M.D., Assistant Professor of Psychiatry.²
- Theodore A. Schwartz, M.D., Assistant Professor of Rhinology and Laryngology.²
- William M. Seabold, M.D., Assistant Professor of Pediatrics.^{2a}
- William B. Settle, M.D., Assistant Professor of Surgical Anatomy² and Associate in Surgery.¹
- Isadore A. Siegel, A.B., M.D., Assistant Professor of Obstetrics.
- Andrew G. Smith, Ph.D., Assistant Professor of Bacteriology.^{2b}
- Edward P. Smith, M.D., Ph.G., Assistant Professor of Gynecology.
- Sol Smith, M.D., Assistant Professor of Medicine.
- Philip S. Wagner, M.D., Assistant Professor of Psychiatry.
- Gibson J. Wells, M.D., Assistant Professor of Pediatrics.²
- Milton J. Wilder, M.D., Assistant Professor of Orthopedic Surgery.²
- Asa D. Young, M.D., Assistant Professor of Roentgenology.

ASSOCIATES

- Conrad B. Acton, M.D., Associate in Medicine.
- Marie A. Andersch, Ph.D., Associate in Medicine.
- Margaret B. Ballard, M.D., Associate in Obstetrics.
- Eugene S. Bereston, A.B., M.D., Associate in Dermatology.
- Kenneth B. Boyd, A.B., M.D., Associate in Gynecology and Assistant in Obstetrics.

^{1a} Appointment effective November 1, 1948 to June 30, 1949.

^{2a} Effective Oct. 15, 1948.

^{2b} Appointment effective Feb. 1, 1950.

^{2c} Appointment effective Nov. 1, 1948 to June 30, 1949.

⁵ Died July 16, 1949.

- V. V. Brunst, Sc.D., Research Associate in Anatomy.^{1a}
 Harold H. Burns, M.D., Associate in Surgery.²
 M. Paul Byerly, M.D., Associate in Medicine.
 Osborne D. Christensen, M.D., Associate in Obstetrics.¹
 W. A. H. Councill, M.D., Associate in Genito-Urinary Surgery.⁵
 Kathryn Dice, Ed.D., Associate in Clinical Psychology.^{1b}
 Francis G. Dickey, M.D., Associate in Medicine.
 D. McClelland Dixon, M.D., Associate in Obstetrics and Instructor in Pathology
 J. J. Erwin, M.D., Associate in Gynecology.
 L. K. Fargo, M.D., Associate in Genito-Urinary Surgery.
 William L. Fearing, M.D., Associate in Neurology.
 Samuel L. Fox, M.D., Associate in Rhinology, Laryngology and Otology.
 Irving Freeman, M.D., Associate in Medicine.
 William L. Garlick, A.B., M.D., Associate in Surgery.²
 Raymond F. Helfrich, A.B., M.D., Associate in Surgery.
 W. Grafton Herspberger, M.D., Associate in Medicine.
 John T. Hibbitts, M.D., Associate in Gynecology.
 Henry W. D. Holljes, M.D., Associate in Medicine.
 Z. Vance Hooper, M.D., Associate in Gastro-Enterology.
 Clewell Howell, B.S., M.D., Associate in Pediatrics.
 Benjamin H. Isaacs, A.B., M.D., Associate in Rhinology and Laryngology.²
 Meyer W. Jacobson, M.D., Associate in Medicine.
 Joseph V. Jerardi, B.S., M.D., Associate in Surgery.
 Hugh J. Jewett, M.D., Associate in Genito-Urinary Surgery.²
 Arthur Karfgin, B.S., M.D., Associate in Medicine.
 Joseph I. Kemler, M.D., Associate in Ophthalmology.
 Elizabeth LaForge, M.S.S., Associate in Psychiatric Social Work.^{1b}
 C. Edward Leach, M.D., Associate in Medicine.
 Samuel Legum, M.D., Associate in Medicine.
 Kurt Levy, M.D., Associate in Medicine.²
 Ephraim T. Lisansky, M.D., Associate in Medicine.
 G. Bowers Mansdorfer, B.S., M.D., Associate in Pediatrics.
 Henry J. L. Marriott, M.A., B.M., Associate in Medicine.²
 I. H. Maseritz, M.D., Associate in Orthopaedic Surgery.
 Karl F. Mech, B.S., M.D., Associate in Anatomy² and Instructor in Pathology.
 Lyle J. Millan, M.D., Associate in Genito-Urinary Surgery.
 Frank K. Morris, A.B., M.D., Associate in Gynecology.
 Hugh B. McNally, B.S., M.D., Associate in Obstetrics.
 S. Edwin Muller, M.D., Associate in Medicine.
 Herbert E. Reifschneider, A.B., M.D., Associate in Surgery and Surgical Anatomy.²
 Robert A. Reiter, M.D., Associate in Medicine.
 Samuel T. R. Revell, M.D., Associate in Medicine.
 Henry L. Rigdon, M.D., Associate in Surgery and Surgical Anatomy.
 R. C. V. Robinson, M.D., Associate in Dermatology.
 Sidney Scherlis, M.D., Associate in Medicine.^{1c}

^{1a} Appointment effective Sept. 1, 1948.

^{1b} Appointment effective Jan. 1, 1950.

^{1c} Appointment effective Nov. 1, 1948.

⁵ Died March 26, 1949.

William M. Seabold, A.B., M.D., Associate in Pediatrics.
 Lawrence M. Serra, M.D., Associate in Medicine.
 A. Albert Shapiro, B.S., M.D., Associate in Dermatology.
 Arthur G. Siwinski, A.B., M.D., Associate in Surgery.
 Benedict Skitarelic, A.B., M.D., Associate in Pathology.
 Harry A. Teitlebaum, B.S., M.D., Ph.D., Associate in Neurology.
 Isadore Tuerk, M.D., Associate in Psychiatry.
 William K. Waller, M.D., Associate in Medicine.
 Austin H. Wood, M.D., Associate in Genito-Urinary Surgery.
 Israel Zeligman, A.B., M.D., Associate in Dermatology.

LECTURERS

Jonas Friedenwald, M.A., M.D., Lecturer in Ophthalmic Pathology.
 Amedeo S. Marrazzi, M.D., Lecturer in Pharmacology.^{1a}
 Joseph M. Miller, M.D., Lecturer in Surgery.
 William H. Summerson, Ph.D., Lecturer in Biological Chemistry

INSTRUCTORS

A. Russell Anderson, M.D., Instructor in Psychiatry.
 Leon Ashman, M.D., Instructor in Medicine.
 Charles P. Barnett, A.B., M.D., Instructor in Pathology.¹
 Edmund G. Beacham, M.D., Instructor in Medicine.
 Harry McB. Beck, M.D., Instructor in Gynecology.²
 Robert Z. Berry, A.B., M.D., Instructor in Rhinology and Laryngology.²
 John Z. Bowers, B.S., M.D., Instructor in Medicine.
 Harry C. Bowie, B.S., M.D., Instructor in Surgery and Surgical Anatomy.
 Thomas S. Bowyer, A.B., M.D., Instructor in Gynecology and Assistant in Obstetrics.
 George H. Brouillet, B.S., M.D., Instructor in Surgery.
 Ann Virginia Brown, A.B., Instructor in Biological Chemistry.
 J. E. Brumback, Jr., B.S., M.D., Instructor in Ophthalmology.²
 Samuel H. Bryant, A.B., D.D.S., Instructor in Oral Diagnosis, School of Dentistry.
 William J. Bryson, A.B., M.D., Instructor in Pathology.
 Lucile J. Caldwell, M.D., Instructor in Dermatology
 Joseph P. Cappuccio, D.D.S., Instructor in Oral Surgery, School of Dentistry.¹
 Thomas A. Christensen, A.B., M.D., Instructor in Pediatrics.^{1b}
 Richard J. Colfer, B.S., M.D., Instructor in Pathology
 Joseph M. Cordi, M.D., Instructor in Pediatrics.
 Stuart G. Coughlan, B.S., M.D., Instructor in Surgery.
 Richard J. Cross, B.S., M.D., Instructor in Ophthalmology.¹
 Raymond M. Cunningham, A.B., M.D., Instructor in Proctology² and Assistant in Surgery.
 John R. Davis, M.D., Instructor in Medicine.
 W. Allen Deckert, A.B., M.D., Instructor in Gynecology and Assistant in Surgery.
 William A. Dodd, M.D., Instructor in Gynecology.²
 Charles H. Doeller, Jr., A.B., M.D., Instructor in Gynecology,² and Assistant in Obstetrics.
 William C. Duffy, A.B., M.D., Instructor in Gynecology.²

^{1a} Appointment effective April 1, 1949.

^{1b} Appointment effective July 1, 1948 to June 30, 1949.

- Martha C. Eaton, A.B., Sc.M., Instructor in Hygiene and Public Health.^{3a}
 Ernest S. Edlow, A.B., M.D., Instructor in Gynecology.
 Donald E. Fisher, M.D., Instructor in Pathology.²
 Philip D. Flynn, M.D., Instructor in Medicine.
 Paul N. Friedman, A.B., M.D., Instructor in Ophthalmology.
 Gerald A. Galvin, M.D., Instructor in Gynecology.^{1a}
 L. Calvin Gareis, B.S., M.D., Instructor in Pathology.¹
 Jason H. Gaskel, M.D., Instructor in Orthopaedic Surgery.
 Russell Gigliotti, D.D.S., Instructor in Oral Diagnosis School of Dentistry.
 H. L. Granoff, A.B., M.D., Instructor in Gynecology.²
 John S. Haines, M.D., Instructor in Genito-Urinary Surgery.²
 Samuel J. Hankin, M.D. Instructor in Medicine.
 Alvin J. Hartz, A.B., M.D., Instructor in Medicine.
 Mary L. Hayleck, M.D., Instructor in Pediatrics.
 Robert F. Healy, M.D., Instructor in Surgery.
 Donald B. Hebb, M.D., Instructor in Proctology² and Assistant in Surgery.
 William G. Helfrich, B.S., M.D., Instructor in Medicine.
 Benjamin Highstein, M.D., Instructor in Dermatology.
 Mark B. Hollander, A.B., M.D., Instructor in Dermatology and Syphilology.
 Calvin Hyman, M.D., Instructor in Surgery.
 Conrad L. Inman, D.D.S., Instructor in Anesthesiology, School of Dentistry.¹
 Edward S. Kallins, B.S., M.D., Instructor in Medicine.
 William H. Kammer, Jr., A.B., M.D., Instructor in Medicine.
 Harry F. Kane, M.D., Instructor in Gynecology.²
 Theodore Kardash, B.S., M.D., Instructor in Gynecology² and Pathology.¹
 Clyde F. Karns, B.S., M.D., Instructor in Surgery.
 A. Kremen, A.B., M.D., Instructor in Ophthalmology.
 Louis J. Kroll, A.B., M.D., Instructor in Medicine.
 Arnold F. Lavenstein, Instructor in Pediatrics.
 F. Ford Loker, B.S., M.D., Instructor in Surgery.²
 Helen I. Maginnis, M.D., Instructor in Gynecology.²
 Charles B. Marek, M.D., Instructor in Gynecology.²
 Joseph H. Marshall, M.D., Instructor in Psychiatry.
 D. J. McHenry, B.S., M.D., Instructor in Ophthalmology.²
 Margaret E. Mellott, B.S., Instructor in Biochemistry.¹
 Israel P. Meranski, B.S., M.D., Instructor in Pediatrics.
 J. Duer Moores, B.S., M.D., Instructor in Surgery.
 J. Huff Morrison, M.D., Instructor in Obstetrics.
 S. Edwin Muller, M.D., Instructor in Medicine.
 Joseph E. Muse, Jr., B.S., M.D., Instructor in Medicine.
 Ruth Musser, M.S., Instructor in Pharmacology.
 John A. Myers, M.E.E., M.D., Instructor in Medicine, Assistant in Gastro-Enterology.
 Francis J. McLaughlin, M.D., Instructor in Psychiatry.
 Samuel Novey, M.D., Instructor in Psychiatry.
 M. Paul Padget, M.D., Instructor in Medicine.
 Richard H. Pembroke, Jr., A.B., M.D., Instructor in Psychiatry.
 Patrick C. Phelan, Jr., Instructor in Surgery.²
 Ross Z. Pierpont, M.D., Instructor in Surgical Anatomy.
 Samuel E. Proctor, A.B., M.D., Instructor in Surgery.

^{1a} Appointment effective Oct. 1, 1948, to June 30, 1949.

^{3a} Resigned December 23, 1948.

Phoebe Rich, M.S.S., Instructor in Psychiatric Social Work.^{1a}
 Daniel R. Robinson, M.D., Instructor in Surgery.
 Seymour W. Rubin, M.D., Instructor in Pathology.
 William J. Rysanek, Jr., M.D., Instructor in Gynecology.²
 Clarence P. Scarborough, M.D., Instructor in Surgery.
 John F. Schaefer, B.S., M.D., Instructor in Surgery.
 Joseph C. Sheehan, B.S., M.D., Instructor in Gynecology.²
 Robert C. Sheppard, M.D., Instructor in Surgery.
 E. Roderick Shipley, A.B., M.D., Instructor in Surgery.²
 Albert J. Shochat, B.S., M.D., Instructor in Gastro-Enterology.
 Ruby A. Smith, B.S., M.D., Instructor in Ophthalmology.
 Melchijah Spragins, B.S., M.D., Instructor in Pediatrics.^{1b}
 Edwin H. Stewart, Jr., M.D., Instructor in Surgery.²
 Cleo D. Stiles, M.D., instructor in Ophthalmology.
 William T. Supik, M.D., Instructor in Proctology.²
 David Tenner, M.D., Instructor in Medicine.
 Raymond K. Thompson, B.S., M.D., Instructor and Director of Research in Neurological Surgery.²
 Wilfred H. Townshend, Jr., A.B., M.D., Instructor in Medicine.
 Robert B. Tunney, A.B., M.D., Instructor in Gynecology.²
 William D. VandeGrift, M.D., Instructor in Pathology.
 Harold L. Vyner, M.D., Instructor in Psychiatry.
 Frederick J. Vollmer, B.S., M.D., Instructor in Medicine.
 Daniel Wilfson, Jr., A.B., M.D., Instructor in Medicine.

ASSISTANTS

A. Maynard Bacon, Jr., B.S., M.D., Assistant in Pediatrics.¹
 Ernest E. Banfield, Jr., A.B., M.D., Assistant in Surgery.^{1c}
 Jane L. Bleakley, Assistant in Art as Applied to Medicine.¹
 Ross C. Brooks, M.D., Assistant in Rhinology and Laryngology.¹
 Frances C. Brown, A.B., Assistant in Physiology.
 Joseph G. Bird, A.B., M.D., Assistant in Pharmacology.
 A. V. Buchness, A.B., M.D., Assistant in Surgery.
 John W. Chambers, M.D., Assistant in Surgery, and Neurological Surgery.
 L. T. Chance, M.D., Assistant in Surgery.
 Jerome Cohn, M.D., Assistant in Medicine.
 Jonas Cohen, M.D., Assistant in Medicine.
 Morris M. Cohen, M.D., Assistant in Dermatology.
 Sara Cook, M.D., Assistant in Post Graduate Medicine.^{1d}
 Donald D. Cooper, M.D., Assistant in Pediatrics.
 Samuel H. Culver, M.D., Assistant in Surgery.
 E. Hollister Davis, A.B., M.D., Assistant in Anaesthesia.
 George H. Davis, M.D., Assistant in Obstetrics.
 John B. DeHoff, M.D., Assistant in Medicine.
 Michael L. DeVincentis, B.S., M.D., Assistant in Surgery.²
 William C. Dunnigan, A.B., M.D., Assistant in Surgery.

^{1a} Appointment effective Jan. 1, 1950.

^{1b} Appointment effective September 24, 1948.

^{1c} Appointment effective January 1, 1949.

^{1d} Appointment effective September 9, 1949.

- Morris A. Fine, M.D., Assistant in Medicine and Genito-Urinary Surgery.
 Audrey M. Funk, A.B., Assistant in Medicine.
 William H. Fusting, M.D., Assistant in Medicine.
 L. Calvin Garcis, B.S., M.D., Assistant in Obstetrics.
 William R. Geraghty, B.S., M.D., Assistant in Surgery.
 Louis F. Goodman, M.D., Assistant in Surgery.¹
 Richard D. Grill, Assistant in Art as Applied to Medicine.
 Joseph B. Gross, B.S., M.D., Assistant in Medicine.
 Charles W. Hawkins, M.D., Assistant in Genito-Urinary Surgery.¹
 L. Ann Hellen, B.S., Assistant in Medicine.
 Sylvia Himmelfarb, A.B., Assistant in Physiology.
 John H. Hirschfeld, M.A., Assistant in Laryngology and Medicine.^{1a}
 William A. Holbrook, Jr., M.D., Assistant in Medicine.^{1b}
 John V. Hopkins, M.D., Assistant in Orthopaedic Surgery.
 Rollin C. Hudson, M.D., Assistant in Medicine.
 Robert W. Johnson, III, A.B., M.D., Assistant in Plastic Surgery.^{1c}
 James R. Karns, B.S., M.D., Assistant in Medicine, and Physician in charge of Medical care of Students.
 Schuyler G. Kohn, B.S., M.D., Assistant in Obstetrics.
 Alfred S. Lederman, Assistant in Gastro-Enterology.
 Frank E. Leslie, A.B., M.D., Assistant in Medicine.
 Lorman L. Levinson, A.B., M.D., Assistant in Obstetrics.^{1e}
 V. Harwood Link, A.B., M.D., Assistant in Dermatology.
 W. Kenneth Mansfield, Jr., M.D., Assistant in Obstetrics.
 Howard B. McElwain, M.D., Assistant in Surgery.
 John C. Osborne, M.D., Assistant in Medicine.
 Frank J. Otanasek, M.D., Assistant in Neurological Surgery.
 Ross Z. Pierpont, M.D., Assistant in Surgery.¹
 Susan R. Pincoffs, R.N., Assistant in Medicine.¹
 Hazel Y. Pruitt, Assistant in Bacteriology.
 Frederick M. Reese, A.B., M.D., Assistant in Ophthalmology.
 William F. Renner, M.D., Assistant in Medicine.^{1d}
 James Russo, M.D., Assistant in Anaesthesiology.
 J. King B. E. Seegar, Jr., A.B., M.D., Assistant in Obstetrics.
 Jerome Sherman, M.D., Assistant in Medicine.^{1e}
 E. Roderick Shipley, A.B., M.D., Assistant in Surgery.
 Elizabeth Smith, M.S.S., Assistant in Psychiatric Social Work.^{1f}
 Samuel Snyder, M.D., Assistant in Medicine.
 O. Walter Spurrier, M.D., Assistant in Pediatrics.
 Carl Christian Stein, Assistant in Art as Applied to Medicine.¹
 Stuart D. Sunday, M.D., Assistant in Medicine.
 Adam Swiss, M.D., Assistant in Medicine.
 T. J. Touhey, M.D., Assistant in Surgery.
 Stephen J. Van Lill, III, A.B., M.D., Assistant in Medicine.
 William Earl Weeks, M.D., Assistant in Pediatrics.

^{1a} Appointment effective Oct. 7, 1948.

^{1b} Appointment effective Sept. 13, 1948 to June 30, 1949.

^{1c} Appointment effective Sept. 1, 1948.

^{1d} Appointment effective Jan. 24, to May 28, 1949.

^{1e} Appointment effective June 1, 1949.

^{1f} Appointment effective Jan. 1, 1950.

J. Carlton Wich, B.S., M.D., Assistant in Pediatrics.
 Marcella Wiseman, M.S.S., Assistant in Psychiatric Social Work.^{1k}
 Thomas L. Worsley, M.D., Assistant in Medicine.
 Howard L. Zupnik, M.D., Assistant in Surgery.

FELLOWS

Phillip R. Appfel, M.D., Fellow in Psychiatry.^{1a}
 Ruth W. Baldwin, A.B., M.D., Fellow in Pediatrics.^{1b}
 Frederick K. Bell, Ph.D., U. S. Pharmacopoeia Fellow.
 Harold P. Biehl, National Cancer Research Trainee.¹
 Joseph G. Bird, A.B., M.D., Fellow in Pharmacology.
 George W. Bradford, M.D., Baltimore Rh Laboratory, Fellow in Medicine.^{1g}
 Raymond M. Burgison, M.S., Fellow in Pharmacology.¹¹
 Robert G. Chambers, M.D., National Cancer Research Trainee.
 Russell Lee Christopher, Weaver Fellow in Anatomy.^{1e}
 Sarah Cook, M.D., Fellow in Pediatrics.^{1b}
 Robert M. N. Crosby, M.D., Hitchcock Fellow in Neurological Surgery.¹
 John M. Dennis, B.S., M.D., Fellow in Roentgenology.
 Mary S. Fassel, A.B., Emerson Fellow in Pharmacology.^{1h}
 Joseph A. Guilbeau, Jr., M.D., Baltimore Rh Laboratory Fellow in Obstetrics³
 John B. Harman, B.S., Emerson Fellow in Pharmacology.^{1h}
 Dorothy H. Hubbard, Weaver Fellow in Biological Chemistry.¹
 Dewitt T. Hunter, Weaver Fellow in Anatomy.^{1e}
 Frederick Go-Kiatsu, B.S., M.D., Fellow in Pediatrics.^{1b}
 Raymond F. Kline, B.S., M.S., Porter Fellow in Physiology.
 Chi Chan Ling, Ph.C., M.S., Ohio Chemical Co. Fellow in Pharmacology.^{1h}
 William E. Loechel, Fellow in Anatomy.^{1j}
 Arlie R. Mansberger, Jr., M.D., Research Fellow in Surgery.^{1b}
 Marion A. Marfy, M.A., Fellow in Clinical Psychology.^{1a}
 Suzanne Mohler, B.S., Fellow in Psychiatry.^{1a}
 J. Pomeroy Nichols, M.D., Hoffberger Fellow in Neurological Surgery.¹
 John C. Ozazewski, M.D., Fellow in Neuro-Surgery.^{1d}
 John W. Pence, Fellow in Pharmacology.^{1f, 3b}
 Aaron Podolnick, B.S., M.D., Fellow in Psychiatry.
 Ruth Rabinovitch, A.B., M.D., Fellow in Psychiatry.^{1a}
 C. L. Spurling, M.D., Baltimore Rh Laboratory Fellow in Medicine.¹
 Wm. Stark, M.D., Fellow in Psychiatry.^{1a}
 Edward B. Truitt, B.S., Markle Fellow in Pharmacology.
 Robert T. Walker, M.D., Fellow in Medicine.¹
 Geraldine F. Wolfe, B.S., U.S.P.H. Fellow in Anatomy.¹

^{1a} Appointment effective September 16, 1948.

^{1b} Appointment effective July 1, 1949 to June 30, 1950.

^{1d} Appointment effective January 1, 1949 to June 30, 1949.

^{1e} Appointment effective June 1, to August 31, 1949.

^{1f} Appointment effective October 1, 1948 to July 31, 1949.

^{1g} Appointment effective October 1, 1948 to September 30, 1949.

^{1h} Appointment effective September 1, 1949 to August 31, 1950

¹ⁱ Appointment effective October 1, 1949 to September 30, 1950.

^{1j} Appointment effective July 1, to Aug. 31, 1949.

^{1k} Appointment effective Jan. 1, 1950.

^{3b} Resigned June 30, 1949.

RESEARCH ASSISTANTS

Jane F. Beardsley, B.S., Research Assistant in Biological Chemistry.^{1c}
 Norma F. McElvain, Research Assistant in Biological Chemistry.^{3a}

EXTRAMURAL ASSISTANT RESIDENTS IN MEDICINE

John F. Benson, M.D., Assistant Resident in Medicine.¹
 Howard E. Hall, M.D., Assistant Resident in Medicine.¹
 William Roemmich, M.D., Assistant Resident in Medicine.^{1d}
 Sidney J. Venable, M.D., Assistant Resident in Medicine.¹

UNIVERSITY HOSPITAL

EXECUTIVE COMMITTEE OF THE STAFF

JOHN E. SAVAGE, *Chairman*
 THEODORE E. WOODWARD, *Secretary*

CHARLES REID EDWARDS	ALFRED T. NELSON
T. NELSON CAREY	MILTON S. SACKS
J. MASON HUNDLEY, JR.	J. EDMUND BRADLEY
LOUIS H. DOUGLASS	GEORGE H. YEAGER
WALTER L. KILBY	F. EDWIN KNOWLES

<i>Elected Members</i>	<i>Term Expires</i>
EPHRAIM T. LISANSKY.....	1949
A. H. FINKELSTEIN.....	1949
HOWARD B. MAYS.....	1949
HARRY C. HULL.....	1949
SAMUEL T. H. REVELL, JR.....	1950
HENRY F. ULLRICH.....	1950

MAURICE C. PINCOFFS, <i>Assistant to the President</i>	}	<i>Ex officio members</i>
H. BOYD WYLIE, <i>Dean</i>		
GEORGE H. BUCK, <i>Director of the University Hospital</i>		

UNIVERSITY HOSPITAL STAFF

GEORGE H. BUCK, *Director*

<i>Physicians-in-Chief</i>	{ MAURICE C. PINCOFFS T. NELSON CAREY
<i>Physicians</i>	{ THOMAS P. SPRUNT LOUIS A. M. KRAUSE WILLIAMS S. LOVE, JR.
<i>Gastro-Enterologist</i>	{ FRANCIS DICKEY SAMUEL MORRISON

^{1c} Appointment effective September 1, 1949 to June 30, 1950.

^{1d} Appointment effective Jan. 1, 1949 to June 30, 1949.

^{3a} Resigned, February 1, 1949.

<i>Neurologists</i>	{ IRVING J. SPEAR ⁴ LEON FREEDOM WILLIAM FEARING EDWARD F. COTTER
<i>Psychiatrist-in-Chief</i>	JACOB E. FINESINGER
<i>Psychiatrists</i>	{ RALPH P. TRUITT H. WHITMAN NEWELL
<i>Pediatrician-in-Chief</i>	J. EDMUND BRADLEY
<i>Pediatricians</i>	{ C. LORING JOSLIN ALBERT JAFFE A. H. FINKELSTEIN WILLIAM M. SEABOLD
<i>Dermatologist-in-Chief</i>	HARRY M. ROBINSON, SR.
<i>Dermatologists</i>	{ FRANCIS A. ELLIS HARRY M. ROBINSON, JR.
<i>Pathologist-in-Chief</i>	HUGH R. SPENCER
<i>Pathologists</i>	{ DEXTER L. REIMANN JOHN A. WAGNER
<i>Surgeon-in-Chief</i>	CHARLES REID EDWARDS
<i>Surgeons</i>	{ GEORGE H. YEAGER OTTO C. BRANTIGAN CHARLES A. REIFSCHNEIDER HARRY C. HULL
<i>Neurological Surgeon-in-Chief</i>	CHARLES BAGLEY, JR.
<i>Neurological Surgeons</i>	{ RICHARD G. COBLENTZ JAMES G. ARNOLD, JR.
<i>Laryngologist-in-Chief</i>	EDWARD A. LOOPER
<i>Laryngologists</i>	{ FRANKLIN B. ANDERSON THOMAS R. O'ROURK
<i>Proctologist-in-Chief</i>	MONTE EDWARDS
<i>Proctologist</i>	THURSTON R. ADAMS
<i>Orthopedic Surgeon-in-Chief</i>	ALLEN F. VOSHELL
<i>Orthopedic Surgeons</i>	{ MOSES GELLMAN HENRY F. ULLRICH MILTON J. WILDER
<i>Genito-Urinary Surgeon-in-Chief</i>	W. HOUSTON TOULSON
<i>Genito-Urinary Surgeons</i>	{ LYLE J. MILAN HOWARD B. MAYS
<i>Dental Surgeon-in-Chief</i>	BRICE M. DORSEY

⁴ Retired.

	{	MYRON S. AISENBERG
		JOSEPH C. BIDDIX
		SAMUEL H. BRYANT
		JOSEPH P. CAPPuccio
		EDWARD C. DOBBS
		GRAYSON W. GAVER
Dentists	{	RUSSELL GIGLIOTTI
		HUGH T. HICKS
		CONRAD L. INMAN
		ERNEST B. NUTTALL
		KENNETH V. RANDOLPH
		WILBUR O. RAMSEY
		LEWIS C. TOOMEY
Roentgenologist-in-Chief		WALTER L. KILBY
Roentgenologists	{	CHARLES N. DAVIDSON
		DONALD J. BARNETT
Bronchoscopist-in-Chief		EDWARD A. LOOPER
Bronchoscopists	{	FREDERICK T. KYPER
		JOHN H. HIRSCHFELD
Otologist-in-Chief		THOMAS R. O'ROURK
Anesthesiologist-in-Chief		ALFRED T. NELSON
Obstetrician-in-Chief		LOUIS H. DOUGLASS
Obstetricians	{	J. MORRIS REESE
		ISADORE A. SIEGEL
		JOHN E. SAVAGE
		HUGH B. McNALLY
Ophthalmologist-in-Chief		F. EDWIN KNOWLES, JR.
Gynecologist-in-Chief		J. MASON HUNDLEY, JR.
Gynecologists	{	LEO BRADY
		BEVERLY C. COMPTON
		JOHN C. DUMLER
		WILLIAM K. DIEHL
		EVERETT S. DIGGS
		ERNEST I. CORNBROOKS, JR.
Oncologist-in-Chief		GRANT E. WARD
Oncologist		J. MASON HUNDLEY, JR.
Physical Therapist		GRACE E. SHAW

UNIVERSITY HOSPITAL RESIDENT AND INTERN STAFF

July 1, 1949 to June 30, 1950

- JOSÉ A. ALVAREZ, B.S., M.D., *Assistant Resident in Neurosurgery*
 ROBERT C. ARRANTS, B.A., M.D., *Assistant Resident in Obstetrics*
 JOSEPH W. BAGGETT, A.B., M.D., *Assistant Resident in Gynecology*
 THOMAS G. BARNES, A.B., M.D., *Assistant Resident in Surgery*
 ROBERT E. BAUER, A.B., M.D., *Resident in Medicine*
 RAYMOND G. BERGGREEN, A.B., M.D., *Assistant Resident in Pediatrics*
 FRANK J. BRADY, B.S., M.D., *Resident in Anesthesiology*

- FRANK E. BRUMBACK, M.D., *Assistant Resident in Surgery*
 ROBERT E. CATO, A.B., M.D., *Assistant Resident in Roentgenology*¹
 ROWELL, C. CLONINGER, A.B., M.D., *Assistant Resident in Surgery*
 WILLIAM C. COVEY, M.D., *Assistant Resident in Obstetrics (assigned to Gynecology)*
 GARRETT, E. DEANE, A.B., M.D., *Assistant Resident in Pediatrics*
 JOHN M. DENNIS, B.S., M.D., *Fellow in Roentgenology*
 JOHN E. EVANS, JR., B.S., M.D., *Assistant Resident in Surgery*
 JOSEPH B. GANEY, A.B., M.D., *Assistant Resident in Surgery*
 RICHARD A. GILBERT, M.D., *Assistant Resident in Gynecology*
 BENJAMIN M. GOLD, B.S., M.D., *Assistant Resident in Obstetrics*
 DAVID B. GRAY, B.S., M.D., *Assistant Resident in Surgery*
 F. ROBERT HAASE, B.S., M.D., *Resident in Otorhinolaryngology and Ophthalmology*
 ROBERT C. HAGAN, B.S., M.D., *Assistant Resident in Medicine*
 ROBERT R. HAHN, M.D., *Assistant Resident in Medicine*
 CHARLES W. HAWKINS, M.D., *Resident in Urology*
 JOHN A. HIGHTOWER, M.D., *Assistant Resident in Medicine*
 MARK E. HOLT, JR., B.S., M.D., *Assistant Resident in Medicine*
 RICHARD D. HOOVER, B.S., M.D., *Assistant Resident in Surgery*
 ANN HOWARD, B.S., M.D., *Assistant Resident in Pediatrics*
 JEROME IMBURG, B.S., M.D., *Assistant Resident in Pediatrics*
 BLACKBURN S. JOSLIN, M.D., *Resident in Pediatrics*
 H. JAMES LAMBERT, B.S., M.D., *Assistant Resident in Surgery*
 WILLIAM D. LYNN, A.B., M.D., *Resident in Surgery*
 EUGENE R. MCNINCH, M.D., *Assistant Resident in Roentgenology*
 JAMES R. MCNINCH, JR., A.B., M.D., *Assistant Resident in Surgery*
 LOUIS MANGANIELLO, A.B., M.D., *Resident in Neurosurgery*
 GERALD A. MARTIN, B.S., M.D., *Assistant Resident in Medicine*
 JAMES V. MINOR, JR., A.B., M.D., *Assistant Resident in Pediatrics*
 JOHN C. OZAZEWSKI, M.D., *Resident in Ophthalmology*
 S. MALONE PARHAM, A.B., M.D., *Assistant Resident in Obstetrics*
 W. STUART PATTERSON, M.D., *Assistant Resident in Obstetrics*
 BENSON C. SCHWARTZ, M.D., *Intern in Obstetrics*
 JAMES H. SHELL, B.S., M.D., *Assistant Resident in Gynecology*
 GEORGE W. SMITH, M.D., *Assistant Resident in Neurological Surgery—Assigned to Baltimore City Hospitals.*
 F. X. PAUL TINKER, B.S., M.D., *Resident in Gynecology*
 JOHN P. WHITE, III, M.D., *Assistant Resident in Surgery*
 DAVID R. WILL, M.D., *Assistant Resident in Surgery*
 JAMES R. WINTERRINGER, B.S., M.D., *Resident in Obstetrics*
 ISAAC C. WRIGHT, B.S., M.D., *Assistant Resident in Medicine*²
 LATIMER G. YOUNG, A.B., M.D., *Assistant Resident in Pediatrics*

SENIOR INTERNS

- | | |
|----------------------------------|--------------------------------|
| DAVID AULD, A.B., M.D. | NICHOLAS MALLIS, M.D. |
| JAMES M. BISANAR, M.D. | FRED R. MCCRUMB, M.D. |
| JOHN R. HANKINS, B.A., M.D. | WILLIAM A. NIERMANN, M.D. |
| FREDERICK J. HELDRICH, JR., M.D. | KYLE L. SWISHER, JR., M.D. |
| WILLIAM J. HOLLOWAY, M.D. | FRANK J. THEUERKAUF, JR., M.D. |
| H. PATTERSON MACK, M.D. | |

¹ Until October 31, 1949.² Until September 30, 1949.

JUNIOR INTERNS

ROBERT A. ABRAHAM, B.S., M.D.	EDWIN M. HUBBARD, M.D.
LEONARD BACHMAN, B.S., M.D.	EDMUND B. MIDDLETON, M.D.
EDWARD J. BROADDUS, M.D.	HERBERT K. SPEERS, M.D.
CHARLES T. HENDERSON, M.D.	JOHN W. STOVER, M.D.
ARTHUR F. HOGE, JR., B.S., M.D.	JOHN F. STRAHAN, M.D.

DENTAL INTERN

PEDRO H. HERNANDEZ-PARALITICI, D.D.S.

UNIVERSITY HOSPITAL DISPENSARY STAFF

EMMA WINSHIP, R.N.

Dispensary Director

DISPENSARY COMMITTEE

GEORGE H. YEAGER, *Chairman*

EMMA WINSHIP, R.N., *Secretary*

ALLEN FISKE VOSHELL
 BEVERLEY C. COMPTON
 A. H. FINKELSTEIN

LEWIS P. GUNDRY
 HOWARD B. MAYS
 J. HUFF MORRISON

Chief of Medical Clinic.....

<i>Physicians</i>	}	T. NELSON CAREY
		MILTON S. SACKS
		FRANK J. GERAGHTY
		EDWARD F. COTTER
		IRVING FREEMAN
		M. PAUL BYERLY
		WILLIAM K. WALLER
		E. T. LISANSKY
		WALTER KARFGIN
		KURT LEVY
		JOSEPH E. MUSE, JR.
		SAMUEL J. HANKIN
		MORRIS FINE
JAMES R. KARNs		
JOHN B. DeHOFF		
CHARLES H. WILLIAMS		
JONAS COHEN		
STEPHEN VAN LILL, III		

Chief of Gastro-Enterology Clinic..... FRANCIS G. DICKEY

Assistant Gastro-Enterologist..... { Z. VANCE HOOPER
 ALBERT J. SHOCHAT

Chief of Neurology Clinic..... LEON FREEDOM

<i>Assistant Neurologists</i>	{	WILLIAM L. FEARING HARRY A. TEITELBAUM
<i>Chief of Psychiatric Clinic</i>		RALPH P. TRUITT
<i>Clinic Director</i>		H. WHITMAN NEWELL
<i>Assistant Psychiatrists</i>	{	HANS W. LEOWALD KATHRYN L. SCHULTZ RICHARD PEMBROKE
<i>Chief of Chest Clinic</i>		MEYER D. JACOBSON
<i>Assistant, Diseases of the Lungs</i>		MANUEL LEVIN
<i>Chief of Diabetic Clinic</i>		SAMUEL T. R. REVELL
<i>Chief of Cardiovascular Clinic</i>		C. EDWARD LEACH
<i>Assistant Cardiologists</i>	{	WILFRED H. TOWNSHEND ROLLIN C. HUDSON SIDNEY SCHERLIS STEPHEN J. VAN LILL, III FRED B. AGEE, JR. JAMES J. NOLAN
<i>Chief of Allergy Clinic</i>		JEROME SHERMAN
<i>Assistant Allergists</i>	{	EDWARD S. KALLINS J. CARLTON WICH IRVIN BERNARD KEMICK
<i>Allergy Clinic Technicians</i>	{	SELMA R. GOLDSMITH SHIRLEY W. CORREL
<i>Director, Pediatric Clinic</i>		A. H. FINKELSTEIN
<i>Chief of Pediatric Clinic</i>		SAMUEL S. GLICK
<i>Assistant Pediatricians</i>	{	LOUIS V. BLUM ARNOLD F. LAVENSTEIN THOMAS E. WEEKS J. CARLTON WICH HOWARD GOODMAN MELVIN N. BORDEN LESTER CAPLAN RUTH B. BALDWIN
<i>Director, Pediatric Cardiac Clinic</i>		SIDNEY SCHERLIS
<i>Assistant Director, Pediatric Cardiac Clinic</i>		GIBSON J. WELLS
<i>Chief of Endocrinology Clinic</i>		CONRAD B. ACTON
<i>Assistant in Endocrinology Clinic</i>		DANIEL E. BOGORAD
<i>Chief of Surgical Clinic</i>		ROBERT C. SHEPPARD
<i>Assistant Surgeons</i>	{	E. RODERICK SHIPLEY SAMUEL E. PROCTOR WILLIAM B. SETTLE KARL F. MECH

<i>Chief of Plastic Surgery</i>	EDWARD A. KITLOWSKI
<i>Professor of Speech</i>	RAY EHRENSBERGER, PH.D.
<i>Associate Professor of Speech, University of Maryland at College Park</i>	MERLE ANSBERRY, PH.D.
<i>Chief of Orthopedic Surgery Clinic</i>	ALLEN FISKE VOSHELL
<i>Assistant Orthopedic Surgeons</i>	{ MOSES GELLMAN HENRY F. ULLRICH MILTON J. WILDER JAMES P. MILLER ROBERT P. ABRAMS A. WESLEY JOHNSON FRANCIS SOHOLT
<i>Chief of Genito-Urinary Clinic</i>	W. HOUSTON TOULSON
<i>Assistant Genito-Urinary Surgeons</i>	{ JOHN F. HOGAN LYLE J. MILLAN MORRIS A. FINE HOWARD B. MAYS
<i>Director of Dermatology and Syphilis Clinic</i>	HARRY M. ROBINSON, SR.
<i>Chief of Dermatology and Syphilis Clinic</i>	HARRY M. ROBINSON, JR.
<i>Dermatologists and Syphilologists</i>	{ FRANCIS A. ELLIS ISRAEL ZELIGMAN A. ALBERT SHAPIRO R. C. V. ROBINSON EUGENE S. BERESTON
<i>Assistant Dermatologists and Syphilologists</i>	{ BENJAMIN HIGHSTEIN LUCILE CALDWELL V. HARWOOD LINK MORRIS M. COHEN MARK B. HOLLANDER ALFRED H. DANN
<i>Chief of Rhinology and Laryngology Clinic</i>	BENJAMIN S. RICH
<i>Assistant Rhinologists and Laryngologists</i>	{ THOMAS R. O'ROURK SAMUEL L. FOX ALBERT STEINER RICHARD J. CROSS ROSS C. BROOKS
<i>Chief of Proctology Clinic</i>	MONTE EDWARDS
<i>Assistant Proctologists</i>	{ THURSTON R. ADAMS DONALD B. HEBB WILLIAM J. SUPIK RAYMOND CUNNINGHAM
<i>Chief of Gynecology Clinic</i>	J. MASON HUNDLEY, JR.
<i>Assistant Chief of Gynecology Clinic</i>	BEVERLY C. COMPTON

<i>Assistant Gynecologists</i>	{ JOHN C. DUMLER WILLIAM K. DIEHL EVERETT S. DIGGS ERNEST I. CORNBROOKS, JR. JOHN T. HIBBITTS KENNETH B. BOYD W. ALLEN DECKERT HELEN I. MAGINNIS CHARLES B. MAREK STUART RIZIKA THEODORE KARDASH
<i>Female Cystoscopists</i>	{ J. MASON HUNDLEY, JR. BEVERLY C. COMPTON WILLIAM K. DIEHL ERNEST I. CORNBROOKS, JR. EVERETT S. DIGGS
<i>Chief of Dental Clinic</i>	BRICE M. DORSEY
<i>Assistant Chief of Dental Clinic</i>	LEWIS C. TOOMEY
<i>Assistant Dentists</i>	{ WILLIAM O. RAMSEY RUSSELL GIGLIOTTI SAMUEL H. BRYANT EDWARD C. DOBBS JOSEPH P. CAPPUCCIO
<i>Chief of Obstetrical Clinic</i>	J. HUFF MORRISON
<i>Assistant Chief of Obstetrical Clinic</i>	MARGARET B. BALLARD
<i>Assistant Obstetricians</i>	{ JOHN E. SAVAGE KENNETH B. BOYD W. KENNETH MANSFIELD L. CALVIN GAREIS J. K. B. E. SEEGAR CHARLES H. DOELLER, JR. GEORGE H. DAVIS SCHUYLER G. KOHN THEODORE KARDASH LORMAN L. LEVINSON
<i>Chief of Oncology Clinic, Gynecological Division</i> ..	J. MASON HUNDLEY, JR.
<i>Assistants in Gynecological Division</i>	{ JOHN C. DUMLER WILLIAM K. DIEHL ERNEST I. CORNBROOKS, JR. EVERETT S. DIGGS
<i>Chief of Oncology Clinic, Surgical Division</i>	GRANT E. WARD
<i>Assistants in Surgical Division</i>	{ ARTHUR G. SIWINSKI E. EUGENE COVINGTON J. DUER MOORES EDWIN H. STEWART, JR. LOUIS E. GOODMAN

<i>Chief of Vascular Clinic</i>	GEORGE H. YEAGER
<i>Assistant Chief of Vascular Clinic</i>	RAYMOND CUNNINGHAM
<i>Medical Consultant—Vascular Clinic</i>	LEWIS P. GUNDRY
<i>Chief of Ophthalmology Clinic</i>	F. EDWIN KNOWLES, JR.

<i>Assistant Ophthalmologists</i>	PAUL N. FRIEDMAN
	CLEO D. STILES
	RUBY A. SMITH
	FREDERICK M. REESE
	D. J. MCHENRY
	J. E. BROMBACK, JR.
	RICHARD J. CROSS

<i>Occupational Therapist</i>	MISS LORA E. DUNETZ
<i>Directress, Social Service</i>	MISS MARY FITZPATRICK

MEDICAL CARE CLINIC

<i>Director</i>	HENRY W. D. HOLLJES
<i>Assistant Director</i>	SUSAN R. PINCOFFS

The Medical Care Clinic of the University of Maryland is the result of a study by the Medical and Chirurgical Faculty of Maryland in cooperation with the State Planning Commission. The present Clinic, located on the third floor of the Dispensary Building, is the first of its kind in this country. Public assistance clients are referred to the Clinic by the Baltimore City Health Department and are scheduled for an initial physical examination by physicians affiliated with the University of Maryland. A family physician is chosen by the patient from a list available at the Clinic. Copies of the individual's medical history and examinations are sent to the physician selected, who then becomes responsible for the medical care of the patient.

The Medical Care Program is, in this way, an entirely new approach to the problem of the indigent patient. For the first time, he becomes the responsibility of a private physician. This places the practice of medicine to the indigent on a par with the practice of private medicine.

After the initial examination, the Clinic functions as a diagnostic center to serve the needs of the neighborhood practitioner. Consultants working in the Medical Care Clinic are available and at present represent Medicine, Surgery, Gynecology and Otolaryngology. Others will be added as required.

The Clinic functions between 8:30 and 4:30 daily. Registrations and referrals are conducted in the morning. Clinical examinations and consultations are held during the afternoon. Approximately eighty neighborhood physicians have agreed to work with the Medical Care Program. Twenty-five members of the Out-patient Department and University Hospital Staff will conduct examinations in the Clinic.

The Faculty Committee on Post Graduate Education has also undertaken plans to provide instruction to all affiliated physicians.

5,550 public assistance clients have been assigned to this Clinic.

DISPENSARY REPORT FOR YEAR BEGINNING JULY 1, 1947 AND ENDING JUNE 30, 1948

<i>Departments</i>	<i>New Cases</i>	<i>Old Cases</i>	<i>Total .</i>
Allergy.....	171	4,916	5,087
Cardiology.....	112	1,379	1,491
Cystoscopy.....	87	618	705
Dermatology.....	11,435	12,560	23,995
Diabetic.....	68	873	941
Ear, Nose and Throat.....	1,112	2,244	3,356
Endocrine.....	60	230	290
Eye.....	972	2,924	3,896
Gastro-Intestinal.....	157	840	997
Genito-Urinary.....	373	970	1,343
Gynecology.....	1,624	5,931	7,555
Hematology.....	7	127	134
Medicine.....	2,347	5,468	7,815
Neurology.....	178	609	787
Neuro-Surgery.....	235	435	670
Obstetrics.....	1,917	16,032	17,949
Occupational Therapy.....	117	1,324	1,441
Oncology.....	204	1,319	1,523
Oral Surgery.....	624	1,125	1,749
Orthopedic.....	1,440	3,915	5,355
Pediatric.....	2,003	6,523	8,526
Physiotherapy.....	108	706	814
Plastic Surgery.....	27	31	58
Proctology.....	146	307	453
Psychiatry.....	382	486	868
Surgery.....	3,288	8,252	11,540
Tuberculosis.....	127	730	857
Vascular.....	112	597	709
Total.....	29,433	81,471	110,904

MERCY HOSPITAL BOARD OF GOVERNORS WALTER D. WISE, *Chairman*

MOTHER M. BERNADETTE
SISTER M. VERONICA
SISTER M. CARMEL
SISTER M. CORNELIA
SISTER M. VINCENT
SISTER M. JOSEPH

HENRY F. BONGARDT
H. RAYMOND PETERS
MAURICE C. PINCOFFS
WAITMAN F. ZINN
THOMAS K. GALVIN
EDWARD P. SMITH

ELLIOTT H. HUTCHINS
President of Visiting Staff

MERCY HOSPITAL STAFF

<i>Surgeon-in-Chief</i>	WALTER D. WISE
	{ ELLIOTT H. HUTCHINS
	{ F. L. JENNINGS
	{ R. W. LOCHER
<i>Surgeons</i>	{ THOMAS R. CHAMBERS
	{ D. J. PESSAGNO
	{ WILLIAM F. RIENHOFF
	{ HENRY F. BONGARDT
	{ CHARLES BAGLEY, JR.
	{ RICHARD B. COBLENTZ
<i>Neurological Surgeons</i>	{ JAMES D. ARNOLD, JR.
	{ FRANK J. OTENASEK
	{ JOHN W. CHAMBERS
	{ RAYMOND K. THOMPSON
	{ I. O. RIDGELY
	{ JAMES W. NELSON
	{ HOWARD B. McELWAIN
<i>Associate Surgeons</i>	{ SIMON H. BRAGER
	{ JOHN A. O'CONNOR
	{ CHARLES W. MAXSON
	{ I. RIDGEWAY TRIMBLE
	{ RAYMOND F. HELFRICH
	{ JULIUS GOODMAN
	{ S. DEMARCO, JR.
	{ T. J. TOUHEY
	{ WILLIAM N. McFAUL, JR.
	{ MEYER H. ZURAVIN
	{ HOWARD L. ZUPNIK
<i>Assistant Surgeons</i>	{ DANIEL R. ROBINSON
	{ JOSEPH V. JERARDI
	{ WM. C. DUNNIGAN
	{ HAROLD H. BURNS
	{ WILLIAM L. GARLICK
	{ JOHN F. SCHAEFFER
	{ F. FORD LOKER
	{ PATRICK C. PHELAN, JR.
	{ MICHAEL L. DEVINCENTIS
<i>Plastic Surgeon</i>	{ EDWARD A. KITLOWSKI
	{ CLARENCE P. SCARBOROUGH
<i>Consulting Ophthalmologist and Otologist</i>	HARRY FRIEDENWALD
<i>Ophthalmologist</i>	F. EDWIN KNOWLES, JR.
<i>Associate Ophthalmologist</i>	JOSEPH V. JEPPI
	{ M. RASKIN
<i>Associate Ophthalmologists and Otologists</i>	{ JOSEPH I. KEMLER
	{ F. A. PACIENZA

<i>Consulting Rhinologists and Laryngologists</i>	{	W. RAYMOND MCKENZIE GEORGE W. MITCHELL
<i>Rhinologist and Laryngologist</i>		WAITMAN F. ZINN
<i>Associate Rhinologists and Laryngologists</i>	{	FAYNE A. KAYSER BENJAMIN S. RICH THEODORE A. SCHWARTZ BIRKHEAD MACGOWAN BENJAMIN H. ISAACS
<i>Assistant Rhinologist and Laryngologist</i>		JOSEPH V. JEPPI
<i>Bronchoscopeist</i>		WAITMAN F. ZINN
<i>Associate Bronchoscopeist</i>		FAYNE A. KAYSER
<i>Assistant Bronchoscopeist</i>		THEODORE A. SCHWARTZ
<i>Consulting Orthopaedic Surgeon</i>		ALBERTUS C. COTTON
<i>Orthopaedic Surgeon</i>		H. L. ROGERS
<i>Associate Orthopaedic Surgeon</i>		HENRY F. ULLRICH
<i>Assistant Orthopaedic Surgeons</i>	{	I. H. MASERITZ J. H. GASKEL
<i>Proctologist</i>		SIMON P. BRAGER
<i>Urologist</i>		KENNETH D. LEGGE
<i>Associate Urologists</i>	{	LEON K. FARGO FRANCIS W. GILLIS J. S. HAINES
<i>Dermatologists</i>	{	FRANCIS A. ELLIS EUGENE S. BERESTON
<i>Dentist</i>		J. D. FUSCO
<i>Consulting Dentist</i>		CONRAD L. INMAN
<i>Consulting Physician</i>		MAURICE C. PINCOFFS
<i>Physician-in-Chief</i>		H. RAYMOND PETERS
<i>Physicians</i>	{	HARVEY G. BECK THOMAS P. SPRUNT GEORGE McLEAN J. SHELDON EASTLAND LOUIS A. M. KRAUSE THOMAS C. WOLFF
<i>Associate Physicians</i>	{	HUBERT C. KNAPP BARTUS T. BAGGOTT WETHERBEE FORT T. NELSON CAREY SOL SMITH HUGH J. WELCH

	{ S. A. TUMMINELLO J. HOWARD BURNS EARL L. CHAMBERS K. W. GOLLEY
<i>Assistant Physicians</i>	{ WILLIAM H. KAMMER S. EDWIN MULLER JOHN R. DAVIS, JR. J. EMMETT QUEEN FREDERICK J. VOLLMER JOHN C. OSBORNE
<i>Associate Gastro-Enterologists</i>	{ R. FREDERICK LEITZ THEODORE H. MORRISON MAURICE FELDMAN
<i>Assistant Gastro-Enterologist</i>	PHILIP D. FLYNN
<i>Pediatricians</i>	{ EDGAR B. FRIEDENWALD FREDERICK B. SMITH
<i>Associate Pediatrician</i>	G. BOWERS MANSORFER
<i>Assistant Pediatricians</i>	{ JEROME FINEMAN O. WALTER SPURRIER ISRAEL P. MERANSKI EDWARD L. FREY, JR.
<i>Associate Neurologists and Psychiatrists</i>	{ HARRY GOLDSMITH PHILIP F. LERNER
<i>Anesthesiologist</i>	JAMES RUSSO
<i>Obstetrician-in-Chief</i>	EDWARD P. SMITH
<i>Obstetricians</i>	{ J. J. ERWIN THOMAS K. GALVIN FRANK K. MORRIS ERNEST S. EDLOW HUGH B. McNALLY
<i>Associate Obstetricians</i>	{ WILLIAM C. DUFFY CHARLES H. DOELLER, JR.
<i>Assistant Obstetricians</i>	{ J. HOWARD BURNS HARRY F. KANE WILLIAM A. DODD HARRY McB. BECK JOSEPH C. SHEEHAN WILLIAM J. RYSANEK, JR. ROBERT B. TUNNEY
<i>Gynecologist-in-Chief</i>	THOMAS K. GALVIN
<i>Gynecologists</i>	{ EDWARD P. SMITH J. J. ERWIN FRANK K. MORRIS

<i>Associate Gynecologists</i>	{ ERNEST S. EDLOW GEORGE A. STRAUSS, JR. H. L. GRANOFF GERALD GALVIN
<i>Assistant Gynecologists</i>	{ CHARLES H. DOELLER, JR. WILLIAM A. DODD HARRY MCB. BECK WILLIAM C. DUFFY JOSEPH C. SHEEHAN WILLIAM J. RYSANEK, JR. HARRY F. KANE ROBERT B. TUNNEY
<i>Pathologists</i>	{ WALTER C. MERKEL HUGH R. SPENCER
<i>Clinical Pathologist</i>	H. T. COLLEMBERG
<i>Clinical Hematologist</i>	H. RAYMOND PETERS
<i>Clinical Biochemist</i>	CHARLES E. BRAMBEL
<i>Technicians</i>	{ SISTER PAULA MARIE ELEANOR BEHR ELISABETH JOHNSON CARMELA E. MINNICK CONSTANCE CHAPMAN THERESA RINGROSE RITA BERRY
<i>Consulting Radiologist</i>	ALBERTUS COTTON
<i>Radiologist</i>	ASA D. YOUNG
<i>Assistant Radiologist</i>	E. EUGENE COVINGTON
<i>Technicians</i>	{ SISTER PAULA MARIE ELEANOR BEHR ELIZABETH JOHNSON CARMELA E. MICELI LILLIAN BUTLER BETTY WOLFRAM VIRGINIA SCHWARZ JULIETTA PEREZ
<i>Technicians (X-ray)</i>	{ RUTH L. GEPHARDT HENRIETTA McCAFFREY FRANCES MUTH

ANNUAL HOSPITAL APPOINTMENTS

The following annual appointments are made to the Mercy Hospital:

- | | |
|---|------------------------|
| Six Residents in Surgery | Resident in Pediatrics |
| Five Residents in Medicine | Resident in Pathology |
| Resident in Rhinology | |
| Four Residents in Gynecology and Obstetrics | |
| Fourteen Interns on Rotating Service | |

MERCY HOSPITAL RESIDENT AND INTERN STAFF

JULY 1, 1949—JUNE 30, 1950

RESIDENT STAFF

- JAMES G. STEGMAIER, B.S., M.D., *Resident Surgeon*
 ELDEN H. PERTZ, B.S., M.D., *Associate Resident Surgeon*
 KARL A. DILLINGER, M.D., *Senior Assistant Resident Surgeon*
 AUGUST KIEL, JR., M.D., *Senior Assistant Resident Surgeon*
 RENNERT M. SMELSER, M.D., *Junior Assistant Resident Surgeon*
 CLYDE D. THOMAS, JR., M.D., *Junior Assistant Resident Surgeon*
 JOHN F. ULLSPERGER, A.B., M.D., *Resident Gynecologist*
 VINCENT DEPAUL FITZPATRICK, JR., A.B., M.D., *Resident Obstetrician*
 CLAUDE F. BAILEY, A.B., M.D., *Assistant Resident Gynecologist and Obstetrician*
 JOHN A. FERRIS, B.S., M.D., *Assistant Resident Gynecologist and Obstetrician*
 JOSEPH F. LIPIRA, B.S., M.D., *Resident Physician*
 THOMAS P. CONNOR, A.B., M.D., *Assistant Resident Physician*
 ALLYN F. JUDD, A.B., M.D., *Assistant Resident Physician*
 ALBERT M. POWELL, JR., M.D., *Assistant Resident Physician*
 JAMES A. ROBERTS, B.S., M.D., *Assistant Resident Physician*
 DAVID JOSEPHS, JR., A.B., M.D., *Resident Pediatrician*

INTERNS

- | | |
|-----------------------------------|--------------------------------------|
| JAMES A. CLINE, III, M.D. | HOWARD F. RASKIN, B.A., M.D. |
| CHARLES R. FRAVEL, M.D. | CLIFFORD T. RIDDEL, B.A., M.A., M.D. |
| BURTON V. LOCK, M.D. | MARGARET L. SHERRARD, B.A., M.D. |
| MARY E. MATHEWS, B.S., M.S., M.D. | JOHN A. SPITTEL, JR., B.S., M.D. |
| HOMER W. MAY, B.S., M.D. | GENE D. TRETIN, B.S., M.D. |
| JOHN H. PANZARELLA, M.D. | |

MERCY HOSPITAL DISPENSARY STAFF

Dispensary Director.....SISTER M. SCHOLASTICA

Supervisor of Surgical Clinic..... HAROLD H. BURNS

- | | |
|----------------------------------|---------------------|
| <i>Dispensary Surgeons</i> | I. RIDGWAY TRIMBLE |
| | SIMON H. BRAGER |
| | HOWARD L. ZUPNIK |
| | DANIEL R. ROBINSON |
| | JOSEPH V. JERARDI |
| | WILLIAM C. DUNNIGAN |
| | WILLIAM L. GARLICK |
| | JOHN F. SCHAEFFER |
| | F. FORD LOKER |
| | PATRICK C. PHELAN |
| | ARTHUR G. SIWINSKI |
| MELVIN F. POLEK | |
| CLARENCE P. SCARBOROUGH | |
| MICHAEL L. DEVINCENTIS | |

<i>Supervisor of Genito-Urinary Clinic</i>	KENNETH D. LEGGE
<i>Assistant Genito-Urinary Surgeons</i>	{ L. K. FARGO FRANCIS W. GILLIS JOHN S. HAINES
<i>Supervisor of Orthopaedic Clinic</i>	HARRY L. ROGERS
<i>Orthopaedic Surgeons</i>	{ HENRY F. ULLRICH ISAAC GUTMAN I. H. MASERITZ JASON H. GASKEL
<i>Supervisor of Medical Clinic</i>	H. RAYMOND PETERS
<i>Chiefs of Medical Clinic</i>	{ SOL SMITH S. EDWIN MULLER
<i>Assistant Physicians</i>	{ FREDERICK J. VOLLMER WILLIAM H. KAMMER JOHN R. DAVIS J. EMMETT QUEEN CHARLES F. O'DONNELL ARTHUR KARFGIN JOHN C. OSBORNE
<i>Chief of Allergy Clinic</i>	S. EDWIN MULLER
<i>Chief of Cardiovascular Clinic</i>	THOMAS C. WOLFF
<i>Assistant Cardiologist</i>	LEON ASHMAN
<i>Chief of Metabolism Clinic</i>	J. SHELDON EASTLAND
<i>Assistant in Metabolism Clinic</i>	J. E. QUEEN
<i>Gastro-Enterologist</i>	MAURICE FELDMAN
<i>Assistant Gastro-Enterologist</i>	PHILIP FLYNN
<i>Chief of Pediatric Clinic</i>	EDGAR B. FRIEDENWALD
<i>Pediatricians</i>	{ JEROME FINEMAN ISRAEL T. MERANSKI O. WALTER SPURRIER EDWARD L. FREY, SR. J. CARLTON WICH DONALD COOPER EARL WEEKS JOSEPH CORDI
<i>Neurologists and Psychiatrists</i>	{ PHILIP F. LERNER HENRY J. MARRIOTT
<i>Supervisor of Dermatology Clinic</i>	FRANCIS A. ELLIS
<i>Dermatologists</i>	{ EUGENE S. BERESTON R. C. V. ROBINSON
<i>Oncologist</i>	JAMES W. NELSON

<i>Chief of Gynecology Clinic</i>	THOMAS K. GALVIN
<i>Gynecologists</i>	{ EDWARD P. SMITH J. J. ERWIN FRANK K. MORRIS ERNEST S. EDLOW CHARLES H. DOELLER, JR. WILLIAM A. DODD HARRY MCB. BECK WILLIAM C. DUFFY JOSEPH C. SHEEHAN HARRY F. KANE ROBERT B. TUNNEY GERALD A. GALVIN
<i>Chief of Obstetrical Clinic</i>	EDWARD P. SMITH
<i>Obstetricians</i>	{ HARRY F. KANE CHARLES H. DOELLER, JR. WILLIAM A. DODD HARRY MCB. BECK WILLIAM C. DUFFY JOSEPH C. SHEEHAN ROBERT B. TUNNEY
<i>Esophagoscopist</i>	WAITMAN F. ZINN
<i>Associate Esophagoscopist</i>	FAYNE A. KAYSER
<i>Rhinologists and Laryngologists</i>	{ WAITMAN F. ZINN THEODORE A. SCHWARTZ BENJAMIN H. ISAACS ARTHUR WARD
<i>Ophthalmologists and Otologists</i>	{ M. RASKIN F. A. PACIENZA JOSEPH V. JEPPI
<i>Proctologist</i>	SIMON H. BRAGER
<i>Assistant Proctologist</i>	WILLIAM T. SUPIK
<i>Supervisor of Dental Clinic</i>	J. D. FUSCO
<i>Consulting Dentist</i>	CONRAD L. INMAN
<i>Supervisor of Physiotherapy Clinic</i>	LEON HANNAN
<i>Assistant Physiotherapist</i>	ALICE R. HANNAN
<i>Social Workers</i>	{ SISTER M. VINCEN ANNA SHAWBAKER
<i>Secretary</i>	EVA APPLGARTH

MERCY HOSPITAL DISPENSARY REPORT

Year of 1948

<i>Department</i>	<i>New Cases</i>	<i>Old Cases</i>	<i>Total</i>
Allergy.....	17	179	196
Bronchoscopic.....	332	584	916
Cardiology.....	12	178	190
Dental.....	80	71	151
Dermatology.....	241	663	904
Diabetic.....	19	405	424
Gastro-Intestinal.....	22	113	135
Genito-Urinary.....	47	144	191
Gynecology.....	261	545	806
Medicine.....	454	2,242	2,696
Neurology.....	51	367	438
Ophthalmology.....	245	428	673
Orthopaedics.....	96	314	410
Pediatrics.....	384	904	1,288
Physiotherapy.....	173	1,733	1,906
Plastic Surgery.....	0	2	2
Postnatal.....	213	4	217
Prenatal.....	387	2,474	2,861
Proctology.....	40	59	99
Rhinolaryngology.....	402	702	1,104
Surgery.....	830	2,690	3,520
Surgical Follow-Up.....	189	351	540
Well Baby Clinic.....	15	15	30
Totals.....	4,510	15,167	19,677

THE BALTIMORE CITY HOSPITALS

STAFF, 1949-1950

PARKER J. McMILLIN, *Superintendent*

<i>Surgeon-in-Chief</i>	OTTO C. BRANTIGAN, M.D.
<i>Physician-in-Chief, Acting</i>	C. HOLMES BOYD, M.D.
<i>Physician-in-Chief, Radiology</i>	STANLEY H. MACHT, M.D.
<i>Physician-in-Chief, Tuberculosis</i>	H. VERNON LANGELUTTIG, M.D.
<i>Obstetrician-in-Chief</i>	LOUIS H. DOUGLASS, M.D.
<i>Pediatrician-in-Chief</i>	HAROLD E. HARRISON, M.D.
<i>Pathologist-in-Chief</i>	C. GARDNER WARNER, M.D.
<i>Dental Surgeon-in-Chief, Acting</i>	H. GLENN WARING, D.D.S.
<i>Consultant in Psychiatry</i>	ESTHER L. RICHARDS, M.D.
<i>Consultant in Peripheral Vascular Diseases</i>	GEORGE H. YEAGER, M.D.

<i>Visiting Surgeons</i>	{ JAMES C. OWINGS, M.D. I. RIDGEWAY TRIMBLE, M.D. AMOS KOONTZ, M.D. THURSTON R. ADAMS, M.D.
<i>Consultant in Traumatic Surgery</i>	C. A. REIFSCHEIDER, M.D.
<i>Visiting Hand Surgeon</i>	RAYMOND M. CURTIS, M.D.
<i>Assistant Visiting Surgeons</i>	{ HARRY C. BOWIE, M.D. DONALD B. HEBB, M.D. HENRY L. RIGDON, M.D.
<i>Visiting Neuro-Surgeons</i>	{ CHARLES BAGLEY, M.D. RICHARD G. COBLENTZ, M.D. JAMES G. ARNOLD, M.D.
<i>Assistant Visiting Neuro-Surgeon</i>	R. K. THOMPSON, M.D.
<i>Consultants in Plastic Surgery</i>	{ EDWARD A. KITLOWSKI, M.D. EDWARD M. HANRAHAN, JR., M.D.
<i>Assistant Visiting Plastic Surgeon</i>	CLARENCE P. SCARBOROUGH, M.D.
<i>Visiting Urologists</i>	{ W. HOUSTON TOULSON, M.D. HUGH JEWETT, M.D.
<i>Assistant Visiting Urologist</i>	HOWARD B. MAYS, M.D.
<i>Visiting Gynecologists</i>	{ J. MASON HUNDLEY, JR., M.D. BEVERLEY C. COMPTON, M.D. JOHN C. DUMLER, M.D. JOHN T. HIBBITTS, M.D.
<i>Assistant Visiting Gynecologists</i>	{ ERNEST I. CORNBROOKS, JR., M.D. WILLIAM K. DIEHL, M.D. EVERETT S. DIGGS, M.D.
<i>Visiting Proctologist</i>	MONTE EDWARDS, M.D.
<i>Visiting Orthopaedic Surgeons</i>	{ ALLEN F. VOSHELL, M.D. HENRY F. ULLRICH, M.D. MILTON J. WILDER, M.D.
<i>Visiting Laryngologists</i>	{ JOHN BORDLEY, M.D. THOMAS R. O'ROURK, M.D. FRED T. KYPER, M.D.
<i>Assistant Visiting Laryngologists</i>	{ JOHN H. HIRSCHFELD, M.D. ALFRED T. LIEBERMAN, M.D.
<i>Visiting Ophthalmologist</i>	CHARLES E. ILIFF, JR., M.D.
<i>Visiting Oncologists</i>	{ GRANT E. WARD, M.D. ARTHUR G. SIWINSKI, M.D.
<i>Visiting Anesthetists</i>	{ LEONARD ABRAMOVITZ, M.D. ALFRED T. NELSON, M.D. THEODORE STACY, M.D.
<i>Visiting Neuropathologist</i>	JOHN A. WAGNER, M.D.
<i>Assistant Chief Physician</i>	HOWARD K. RATHBUN, M.D.

<i>Visiting Physicians</i>	{	LOUIS A. M. KRAUSE, M.D. CHARLES W. JUDD, M.D. WILLIAM G. SPEED, III, M.D. CRAWFORD N. KIRKPATRICK, M.D.
<i>Assistant Visiting Physicians</i>	{	JAMES R. MCSHANE, M.D. GEORGE G. SCHLESINGER, M.D.
<i>Assistant Visiting Physicians (USPHS)</i>	{	ROGER K. MACDONALD, M.D. JOHN H. MILLER, M.D. DAVID SOLOMON, M.D. LEROY E. DUNCAN, JR., M.D.
<i>Cardiologist (USPHS)</i>		BENJAMIN MANCHESTER, M.D.
<i>Physiologist (USPHS)</i>		NATHAN W. SHOCK, PH.D.
<i>Visiting Neurologist</i>		J. W. MAGLADERY, M.D.
<i>Assistant Visiting Neurologist</i>		GEORGE G. MERRILL, M.D.
<i>Visiting Dermatologist, Acting</i>		RAYMOND C. V. ROBINSON, M.D.
<i>Visiting Laboratory Physician</i>		JULIUS WAGHELSTEIN, M.D.
<i>Visiting Pediatrician</i>		HANS BIX, M.D.
<i>Assistant Physician-in-Chief, Tuberculosis</i>		EDMUND G. BEACHAM, M.D.
<i>Visiting Physician, Tuberculosis</i>		ALVIN S. HARTZ, M.D.
<i>Assistant Visiting Physician, Tuberculosis</i>		JOHN H. HIRSCHFELD, M.D.
<i>Visiting Obstetrician</i>		J. MORRIS REESE, M.D.
<i>Assistant Visiting Obstetricians</i>	{	D. FRANK KALTREIDER, M.D. JOHN E. SAVAGE, M.D. J. WILLIAM DORMAN, M.D. W. NEWTON LONG, JR., M.D. GEORGE W. ANDERSON, M.D. LOUIS C. GAREIS, M.D.
<i>Orthodontist</i>		R. KENT TONGUE, D.D.S.
<i>Assistant Visiting Dental Surgeons</i>	{	L. W. BIMESTEFER, D.D.S. MICHAEL VARIPATIS, D.D.S. B. W. MISINSKI, D.D.S.

THE JAMES LAWRENCE KERNAN HOSPITAL AND
INDUSTRIAL SCHOOL OF MARYLAND FOR
CRIPPLED CHILDREN

STAFF, 1149-1950

<i>Surgeon-in-Chief and Medical Director</i>		ALLEN FISKE VOSHELL, A.B., M.D.
<i>Consultant in Orthopaedic Surgery and Roentgenology</i>		ALBERTUS COTTON, A.M., M.D.
<i>Associate Orthopaedic Surgeons</i>	{	MOSES GELLMAN, B.S., M.D. HARRY ROGERS, M.D. HENRY F. ULLRICH, M.D. WINTHROP M. PHELPS, A.B., M.D. MILTON J. WILDER, M.D.

<i>Roentgenologist</i>	CHARLES N. DAVIDSON, M.D.
<i>Plastic Surgeon</i>	EDWARD A. KITLOWSKI, A.B., M.D.
<i>Aurist and Laryngologist</i>	BENJAMIN S. RICH, A.B., M.D.
<i>Dentist</i>	M. E. COBERTH, D.D.S.
<i>Cardiologist</i>	HELEN M. TAUSSIG, M.D.
<i>Pediatrists</i>	MELCHIJAH SPRAGINS, M.D.
<i>Consulting Surgeon</i>	CHARLES REID EDWARDS, A.B., M.D.
<i>Consulting Aurists and Laryngologists</i>	{ FRANKLIN B. ANDERSON, M.D. EDWARD A. LOOPER, M.D., D.Oph.
<i>Consulting Neurological Surgeon</i>	CHARLES BAGLEY, JR., M.A., M.D.
<i>Consulting Physician</i>	THOMAS R. BROWN, A.B., M.D.
<i>Consulting Dermatologists</i>	{ HARRY M. ROBINSON, SR., M.D. LEON GINSBERG, M.D.
<i>Consulting Neurologists</i>	{ IRVING J. SPEAR, M.D. R. V. SELIGER, M.D.
<i>Consulting Pediatrists</i>	{ BENJAMIN TAPPAN, A.B., M.D. J. EDMUND BRADLEY, M.D.
<i>Consulting Dentist</i>	HARRY B. MCCARTHY, D.D.S.
<i>Consulting Pathologist</i>	HUGH R. SPENCER, M.D.
<i>Consulting Roentgenologist</i>	HENRY J. WALTON, M.D.
<i>Resident Orthopaedic Surgeons</i>	{ ROBERT ABRAMS, M.D. A. WESLEY JOHNSON, M.D. FRANCIS SCHOLT, M.D.
<i>Superintendent</i>	MISS MAUD M. GARDNER, R.N.
<i>Dispensary and Social Service Nurse</i>	MRS. EVELYN BYRD ZAPP, R.N.
<i>Physical Therapists and X-ray Technician</i>	{ MISS ELIZABETH LANE MISS MARGARET KENNEDY MRS. GEORGIANA WISONG
<i>Occupational Therapist</i>	MISS MURIEL ZIMMERMAN, O.T.
<i>Instructor in Grammar School</i>	MISS BERTHA SENDELBACK

HISTORY OF THE SCHOOL OF MEDICINE

The present School of Medicine, with the title University of Maryland School of Medicine and College of Physicians and Surgeons, is the result of a consolidation and merger of the University of Maryland School of Medicine with the Baltimore Medical College (1913) and the College of Physicians and Surgeons of Baltimore (1915).

Through the merger with the Baltimore Medical College, an institution of thirty-two years' growth, the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated in 1872, and established on Hanover Street in a building afterward known as the *Maternité*, the first obstetrical hospital in Maryland. In 1878 union was effected with the Washington University School of Medicine, in existence since 1827, and the college was removed to Calvert and Saratoga Streets. Through the consolidation with the College of Physicians and Surgeons, medical control of the teaching beds in the Mercy Hospital was obtained.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was organized in 1807 and chartered in 1808 under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties: Divinity, Law, and Arts and Sciences; and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

The original building of the Medical School at the N. E. corner of Lombard and Greene Streets was erected in 1812. It is the oldest structure in this country from which the degree of doctor of medicine has been granted annually since its erection. In this building were founded one of the first medical libraries and one of the first medical school libraries in the United States.

At this Medical School dissection was made a compulsory part of the curriculum, and independent chairs for the teaching of gynecology and pediatrics (1867), and of ophthalmology and otology (1873), were installed for the first time in America.

This School of Medicine was one of the first to provide for adequate clinical instruction by the erection of its own hospital in 1823. In this hospital intramural residency for senior students was established for the first time.

The School of Medicine has been co-educational since 1918.

BUILDINGS AND FACILITIES

The original medical building at the N. E. corner of Lombard and Greene Streets houses the office of the Dean, Room 101, the office of the Committee on Admissions, Room 102, two lecture halls, the faculty room and office of the assistant business manager.

The Administration Building, to the east of the original building, contains the Baltimore offices of the Registrar and two lecture halls.

The laboratory building at 31 South Greene Street is occupied by the departments of Pathology, Bacteriology and Biochemistry.

The Frank C. Bressler Research Laboratory provides the departments of Anatomy, Histology and Embryology, Pharmacology, Physiology and Clinical Pathology with facilities for teaching and research. It also houses the research laboratories of the clinical departments, animal quarters, a laboratory for teaching Operative Surgery, a lecture hall and the Bressler Memorial Room.

This building was erected in 1939-1940 at 29 South Greene Street opposite the University Hospital. It was built with funds left to the School of Medicine by the late Frank C. Bressler, an alumnus, supplemented by a grant from the Federal government. The structure, in the shape of an I, extends east from Greene Street, just north of the original building.

MEDICAL LIBRARY

HOWARD ROVELSTAD, A.B., M.A., B.S.L.S. *Acting Director of Libraries*

IDA MARIAN ROBINSON, A.B., B.S.L.S. *Librarian*

HILDA E. MOORE, A.B., A.B.L.S. *Assistant Librarian*

FLORENCE R. KIRK *Assistant Librarian*

EDITH R. MCINTOSH, A.M., A.B.L.S. *Cataloguer*

CHARLOTTE WILSON *Assistant to the Cataloguer*

The Medical Library of the University of Maryland, founded in 1813 by the purchase of the collection of Dr. John Crawford, now numbers 31,000 volumes and several thousand pamphlets and reprints. Over four hundred of the leading medical journals, both foreign and domestic, are received regularly. The library is housed in Davidge Hall, a comfortable and commodious building in close proximity to classrooms and laboratories, and is open daily for the use of members of the faculty, the student body and the profession generally. Libraries pertaining to particular phases of medicine are maintained by several departments of the medical school.

The library of the Medical and Chirurgical Faculty of Maryland and the Welch Medical Library are open to students of the medical school without charge. Other libraries of Baltimore are the Peabody Library and the Enoch Pratt Free Library.

DISPENSARY BUILDING

The old hospital building has been remodeled and is occupied by the Out-patient Department. Thus the students have been provided with a splendidly appointed group of clinics for their training in out-patient work. All departments of clinical training are represented in this remodeled building and all changes have been predicated on the teaching function for which this department is intended.

The office of the Medical School Physician is located in this building.

The Department of Art also occupies quarters here.

UNIVERSITY HOSPITAL

The University Hospital, which is the property of the University of Maryland, is the oldest institution for the care of the sick in the state of Maryland. It was

opened in September 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for patients with diseases of the eye.

In 1933-1934 the new University Hospital was erected and patients were admitted to this building in November 1934. The new hospital is situated at the southwest corner of Redwood and Greene Streets, and is consequently opposite the medical school buildings. The students, therefore, are in close proximity and little time is lost in passing from the lecture halls and laboratories to the clinical facilities of the new building.

This new building, with its modern planning, makes a particularly attractive teaching hospital and is a very valuable addition to the clinical facilities of the medical school.

The new hospital has a capacity of 435 beds and 65 bassinets devoted to general medicine, surgery, obstetrics, pediatrics, and the various medical and surgical specialties.

The teaching zone extends from the second to the eighth floor and comprises wards for surgery, medicine, obstetrics, pediatrics, and a large clinical lecture hall. There are approximately 270 beds available for teaching.

The space of the whole north wing of the second floor is occupied by the department of roentgenology. The east wing houses clinical pathology and special laboratories for clinical microscopy, biochemistry, bacteriology, and an especially well appointed laboratory for students' training. The south wing provides space for electro-cardiographic and basal metabolism departments, with new and very attractive air-conditioned or oxygen therapy cubicles. The west wing contains the departments of rhinolaryngology and bronchoscopy, industrial surgery, ophthalmology, and male and female cystoscopy.

The third and fourth floors each provide two medical and two surgical wards. The fifth floor contains two wards for pediatrics, and on the sixth floor there are two wards for obstetrics. Each ward occupies the space of one wing of the hospital.

On the seventh floor is the general operating suite, the delivery suite, and the central supply station. The eighth floor is essentially a students' floor and affords a mezzanine over the operating and delivery suites, and a students' entrance to the clinical lecture hall.

In the basement there is a very well appointed pathological department with a large teaching autopsy room and its adjunct service of instruction of students in pathological anatomy.

The hospital receives a large number of accident patients because of its proximity to the largest manufacturing and shipping districts of the city.

The obstetrical service is particularly well arranged and provides accommodation for forty ward patients. This service, combined with an extensive home service, assures the student abundant obstetrical training.

During the year ending December 31, 1948, 2427 cases were delivered in the hospital and 632 cases in the outdoor department. Students in the graduating class observed at least thirty-five cases, each student being required to deliver at least eight patients in their homes.

The dispensaries associated with the University Hospital and the Mercy Hospi-

tal are organized upon a uniform plan in order that the teaching may be the same in each. Each dispensary has the following departments: medicine, surgery, pediatrics, ophthalmology, otology, genito-urinary, gynecology, gastroenterology, neurology, orthopaedics, proctology, dermatology, laryngology, rhinology, cardiology, tuberculosis, psychiatry, oral surgery and oncology.

All students in their junior year work each day during one-third of the year in the departments of medicine and surgery of the dispensaries. In their senior year, all students work one hour each day in the special departments.

MERCY HOSPITAL

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets, then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of ministering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space have compelled the erection of additions, until now there are accommodations for 348 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

The clinical material in the free wards is under the exclusive control of the Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons.

THE BALTIMORE CITY HOSPITALS

The clinical facilities of the School of Medicine have been largely increased by the liberal decision of the Department of Public Welfare to allow the use of the wards of these hospitals for medical education. The autopsy material also is available for student instruction.

Members of the junior class make daily visits to these hospitals for clinical instruction in medicine, surgery, and the specialties.

The Baltimore City Hospitals consist of the following separate divisions:

The General Hospital, 400 beds, 90 bassinets.

The Hospital for Chronic Cases, 575 beds.

The Hospital for Tuberculosis, 280 beds.

Infirmery (Home for Aged) 700 beds.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN

This institution is situated on an estate of 75 acres at Dickeyville. The site is within the northwestern city limits and of easy access to the city proper.

The location is ideal for the treatment of children, in that it affords all the advantages of sunshine and country air.

A hospital unit, complete in every respect, offers all modern facilities for the care of any orthopaedic condition in children.

The hospital is equipped with 80 beds—endowed, and city and state supported.

The orthopaedic dispensary at the University Hospital is maintained in closest affiliation and cares for the cases discharged from the Kernan Hospital. The physical therapy department is very well equipped with modern apparatus and trained personnel. Occupational therapy has been fully established and developed under trained technicians.

THE BALTIMORE EYE, EAR, AND THROAT HOSPITAL

This institution was first organized and operated in 1882 as an outgrowth of the Baltimore Eye and Ear Dispensary, which closed on June 14, 1882. The name then given to the new hospital was The Baltimore Eye and Ear Charity Hospital. It was located at the address now known as 625 W. Franklin St. The out-patient department was opened on September 18, 1882 and the hospital proper on November 1 of the same year. In 1898 a new building afforded 24 free beds and 8 private rooms; by 1907 the beds numbered 47; at present there are 60 beds, 29 of which are free. In 1922 the present hospital building at 1214 Eutaw Place was secured and in 1926 the dispensary was opened. In 1928 a clinical laboratory was installed. During 1948 the out-patient visits numbered 22,058.

Through the kindness of the Hospital Board and Staff, our junior students have access to the dispensary which they visit in small groups for instruction in ophthalmology.

REQUIREMENTS FOR ADMISSION

METHOD OF MAKING APPLICATION

Requests for application forms should be filed not earlier than September 15th preceding by one year the desired date of admission. These forms may be secured from the Committee on Admissions, School of Medicine, University of Maryland, Baltimore 1, Maryland.

APPLICATION FOR ADMISSION TO THE FIRST YEAR

Application for admission is made by filing the required form and by having all pertinent data sent directly to the Committee on Admissions, in accordance with the instructions accompanying the application.

Consideration will be given applications received after December 1st provided the class is not complete.

APPLICATION FOR ADMISSION TO ADVANCED STANDING

Students who have attended approved medical schools are eligible to file applications for admission to the second- and third-year classes only. These applicants must be prepared to meet the current first-year entrance requirements in addition to presenting acceptable medical school credentials, and a medical school record based on courses which are quantitatively and qualitatively equivalent to similar courses in this school.

Application to advanced standing is made in accordance with the instructions accompanying the application form.

Persons who already hold the degree of Doctor of Medicine will not be admitted to the Medical School as a candidate for that degree from this university.

MINIMUM REQUIREMENTS FOR ADMISSION

The minimum requirements for admission to the School of Medicine are:

- (a) Graduation from an approved secondary school, or the equivalent in entrance examinations, and
- (b) Three academic years of acceptable college credit, exclusive of physical education and military sciences, earned in colleges of arts and sciences which are currently approved by the Council on Medical Education and Hospitals of the American Medical Association. The quantity and quality of this course of study shall be equivalent to that required for recommendation by the institution where the college courses are being, or have been, pursued.
- (c) The following courses and credits in basic required subjects must be completed by June of the year the applicant desires to be admitted:

	<i>Semester hours</i>	<i>Quarter hours</i>
General biology or zoology	8	12
Inorganic chemistry	8	12
Organic chemistry	6-8	9-12
General physics	8	12
English	6	9
Modern language (German, French, Spanish) . . .	6	9

- (d) The total semester-hour or quarter-hour credits presented must be equivalent in quantity and quality to three-fourths of the credit requirement for graduation by the recommending institution, exclusive of courses in physical education and military sciences.

Applicants who are unable to complete these requirements by June of the year admission is desired, will be considered contingent on places being available, provided all basic required courses and credits shall have been absolved by June as indicated in (c) above.

- (e) Students who are conditioned in college courses are not accepted.

Elective courses should be selected from the following three groups:

<i>Humanities</i>	<i>Natural Sciences</i>	<i>Social Sciences</i>
English (an advanced course in English composition should be taken, if possible)	Vertebrate Embryology	Economics
Scientific German or French (A reading knowledge of either language is desirable, although German is preferred)	Comparative Vertebrate Anatomy	History
Philosophy	Quantitative Analysis	Political Science
	Physical Chemistry	Psychology (a basic course is desirable)
	Mathematics	Sociology, etc.

Careful attention should be given to the selection of elective courses in the natural sciences. Accordingly, it is suggested that the elective list given above be a guide in this connection and that the remainder of the college credits be accumulated from courses designed to promote a broad cultural development. Students should avoid the inclusion of college courses in subjects that occur in the medical curriculum, for example, histology, histological technique, human anatomy, bacteriology, physiology, neurology, physiological chemistry.

It is not intended that these suggestions be interpreted to restrict the education of students who exhibit an aptitude for the natural sciences or to limit the development of students who plan to follow research work in the field of medicine.

In accepting candidates for admission, preference will be given to those applicants who have acceptable scholastic records in secondary school and college, satisfactory scores in the Medical College Admission Test, favorable letters of recommendation from their premedical committees, or from one instructor in each of the departments of biology, chemistry, and physics, and who in all other respects give every promise of becoming successful students and physicians of high standing.

Those candidates for admission who are unconditionally accepted will receive a certificate of matriculation from the office of the Dean.

COMBINED COURSE IN ARTS AND SCIENCES AND MEDICINE

A combined seven years' curriculum leading to the degrees of Bachelor of Science and Doctor of Medicine is offered by the University of Maryland. The first three years are taken in residence in the College of Arts and Sciences at Col-

lege Park, and the last four years in the School of Medicine in Baltimore. (See University catalogue for details of quantitative and qualitative college course requirements.)

If a candidate for the combined degree completes the work of the first year in the School of Medicine with an average of "C" without failures, and if he has absoved the quantitative and qualitative college requirements set up by the University, he is eligible to recommendation by the Dean of the School of Medicine that the degree of Bachelor of Science be conferred.

Because the general commencement usually takes place before the School of Medicine is prepared to release grades of the first-year class, this combined degree of Bachelor of Science is conferred at the commencement following the candidate's second year of residence in the School of Medicine.

STATE MEDICAL STUDENT QUALIFYING CERTIFICATES

Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York, should apply to their respective state boards of education for medical student qualifying certificates (Pennsylvania and New Jersey) or approval of applications for medical student qualifying certificates (New York).

Those students who are accepted must file satisfactory State certificates in the office of the Committee on Admissions, School of Medicine, before registration. No exceptions will be made to this requirement.

Addresses of the State Certifying Offices

Director of Credentials Section, Pennsylvania Department of Public Instruction, Harrisburg, Pa.

Chief of the Bureau of Credentials, New Jersey Department of Public Instruction, Trenton, N. J.

Supervisor of Qualifying Certificates, The State Education Department, Examinations and Inspections Division, Albany, N. Y.

DEFINITION OF RESIDENCE STATUS OF STUDENTS*

Students who are minors are considered to be resident students if, at the time of their registration, the parents* have been residents of this State for at least one year.

Adult students are considered to be resident students if, at the time of their registration, they have been residents of this State for at least one year, provided such residence has not been acquired while attending any school or college in Maryland.

The status of the residence of a student is determined at the time of his first registration in the university and may not thereafter be changed by him unless, in the case of a minor, his parents* move to and become legal residents of this state by maintaining such residence for at least one full calendar year. However, the right of the student (minor) to change from a non-resident to a resident status must be established by him prior to registration for a semester in any academic year.

* The term "parents" includes persons who have been legally constituted the guardians of or stand in loco parentis to such minor students.

CURRENT FEES

Matriculation fee (paid once).....	\$10.00
Tuition fee (each year)—Residents of Maryland.....	450.00
Tuition fee (each year)—Non-Residents.....	600.00
Laboratory fee (each year).....	25.00
Student health service fee (each year).....	20.00
Student activities and service fee (each year).....	15.00
*Lodging and meals fee.....	6.75
Graduation fee.....	15.00
Re-examination fee (each subject).....	5.00
Transcript fee to graduates. First copy gratis, each copy thereafter..	1.00

RULES FOR PAYMENT OF FEES

No fees are returnable.

Make all checks or money orders payable to the "University of Maryland".

When offering checks or money orders in payment of tuition and other fees, students are requested to have them drawn in the exact amount of such fees. Personal checks whose face value is in excess of the fees due will be accepted for collection only.

Acceptance.—Payment of the matriculation fee of \$10.00 and of a deposit on tuition of \$50.00 is required of accepted applicants before the expiration date specified in the offer of acceptance. This \$60.00 deposit is not returnable and will be forfeited if the applicant fails to register, or it will be applied to the applicant's first semester's charges on registration.

Registration.—All students, after proper certification, are required to register at the business office, Gray Laboratory. (See calendar page 5 of this bulletin for dates for the payments of fees, and the note regarding late registration fee.)

One-half of the tuition fee, the laboratory fee, the student health fee, the maintenance and service fee and the student activities fee are payable on the date specified for registration for the first semester.

The remainder of the tuition fee shall be paid on the date designated for the payment of fees for the second semester. Fourth year students shall pay the graduation fee, in addition, at this time.

PENALTY FOR NON-PAYMENT OF FEES

If semester fees are not paid in full on the specified registration dates, a penalty of \$5.00 will be added.

If a satisfactory settlement, or an agreement for settlement, is not made with the business office within ten days after a payment is due, the student automatically is debarred from attendance on classes and will forfeit the other privileges of the School of Medicine.

* Junior Students will be billed for this fee, covering lodging and meals while on obstetrical service at Baltimore City Hospitals. Accordingly, Section B. on Schedule 2 will be billed for the first semester; Section A on Schedule 2 for the second semester.

REEXAMINATION FEE

A student who is eligible to reexaminations must pay the business office \$5.00 for each subject in which he is to be examined, and he must present the receipt to the faculty member giving the examination before he will be permitted to take the examination.

STUDENT ACTIVITIES AND SERVICE FEE

This fee pays for the use of clothing lockers, provides library privileges, maintains student loan collections, a student lounge and cafeteria. It supports a recreational program for students of all classes, provides photographs for all school purposes, including state boards, and furnishes graduates with invitations and tickets to the Pre-commencement Exercises. It supports the activities of the Student Council.

STUDENT HEALTH SERVICE

JAMES R. KARNS, M.D..... Director, Student Health Service.

The Medical School has made provision for the systematic care of students according to the following plan:

1. *Preliminary Examination*—All new students will be examined during the first week of the semester. Notice of the date, time, and place of the examination will be announced to the classes and on the bulletin board. The passing of this physical examination is necessary before final acceptance of any student.

2. *Medical Attention*—Students in need of medical attention will be seen by the school physician, Dr. James R. Karns, in his office at the medical school, at 9 A.M. daily, except Saturday and Sunday. In case of necessity, students will be seen at their homes.

3. *Hospitalization*—If it becomes necessary for any student to enter the hospital during the school year, the school has arranged for the payment of part or all of his hospital expenses, depending on the length of his stay and special expenses incurred. This applies only to students admitted through the school physician's office.

4. *Physical Defects*—Prospective students are advised to have any known physical defects corrected before entering school in order to prevent loss of time which later correction might incur.

5. *Eye Examination*—Each new matriculate is required to undergo an eye examination at the hands of an oculist (Doctor of Medicine) within three months before entering the School of Medicine. Long study hours bring out unsuspected eye defects which cause much loss of time and inefficiency in study if not corrected until after school work is under way.

6. *Limitations*—It is not the function of this service to treat chronic conditions contracted by students before admission, nor to extend treatment to acute conditions arising in the period between academic years, unless the school physician recommends this service.

GENERAL RULES

The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the university authorities deem it expedient. Students are urged, therefore, to read the latest issue of the catalogue and follow the rules set forth therein.

GRADING SYSTEM

Official grades are designated by these symbols:

<i>Symbol</i>	<i>Scholarship</i>	<i>Numerical Equivalent</i>
A	Superior	93-100
B	Good	87- 92
C	Fair	80- 86
D	Passing	75- 79
F	Failure	Below 75
I	Incomplete	—
WF	Withdrew, failing	—

The class standing of seniors only will be released. This standing will appear on senior grade reports sent out from the Registrar's office.

ADVANCEMENT AND GRADUATION

1. No medical student will be permitted to begin work for credit in any semester of any year who reports for classes later than one week after classes begin, except by permission of the Dean.

2. No student will be permitted to advance with unabsolved failures

3. A general scholastic average of C is required for advancement to junior and senior standing and for graduation.

4. A student who in any one year has one failure together with grades of D in all other subjects, will be dropped from the rolls.

5. A student who has failures in two completed major subjects will be dropped from the rolls.

6. All students are required to attend 85% of scheduled classes and take spring examinations unless excused by the Dean.

7. Should a student be required to repeat any year in any course, he must pay regular fees.

8. A student failing his final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and take examinations in such other branches as may be required, provided he is permitted to enter the school as a candidate for graduation.

9. The general fitness of a candidate for graduation as well as the results of his examinations will be taken into consideration by the faculty.

EQUIPMENT

10. At the beginning of the first year, all students must be prepared to provide microscopes of a satisfactory type equipped with a mechanical stage and a sub-stage lamp.

A standard microscope of either Bausch & Lomb, Leitz, Spencer, or Zeiss make, fitted with the following attachments, will meet the requirements:

16 mm., 10x, 0.25 N.A.—4.9 mm. working distance.

4 mm., 43x, 0.65 N.A.—0.6 mm. working distance.

1.8 mm., 97x, oil immersion, 1.25 N.A.—0.13 mm. working distance.

Oculars: 10x and 5x. Huygenian eyepieces.

Triple nose pieces with 16 mm., 4 mm., and 1.9 mm. 125 N.A. oil immersion lens.

Wide aperture stage with quick screw condenser and built on, but detachable, ungraduated mechanical stage. Substage condenser, variable focusing type 1.25 N.A. with iris diaphragm. A rack and pinion focusing device is preferred. Mirror plane on one side, concave on the other. A carrying case is recommended.

Students are cautioned with respect to the purchase of used microscopes since some older instruments were equipped with a 4 mm. (high dry) objective whose N.A. is marked as 0.85 N.A. This objective has such a short working distance (0.3 mm.) that it is difficult or impossible to focus through thick cover glasses or the standard haemocytometer cover glass without breakage. All used microscopes are subject to inspection and approval by the department.

11. Students in the second year class are required to provide stethoscopes.

12. Third- and fourth-year students are required to provide haemocytometers, ophthalmoscopes and otoscopes.

STATE QUALIFYING CERTIFICATES

13. Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York must file State qualifying certificates in the office of the Committee on Admissions, School of Medicine, before registration. No exception will be made to this rule.

EYE EXAMINATION BEFORE ADMISSION

14. Each new matriculate in each class is required to present to the Committee on Admissions a certificate from an oculist, (a graduate in medicine) that the matriculate's eyes have been examined and are in condition, with or without glasses as the case may be, to endure the strain of close and intensive reading.

It is required that this examination be completed within three months prior to registration and that the certificate be mailed to the Committee on Admissions not later than one month before registration.

AWARDING OF COMBINED DEGREES

15. Students entering the School of Medicine on a three-year requirement basis from colleges which usually grant a degree on the successful completion of the first year of medicine, are restricted by the following regulations:

a—The candidate must present a certificate from his college or university that he has absolved the quantitative and qualitative premedical requirements for this degree.

b—The candidate must acquire an average of "C" without failures for the work of his first year in the School of Medicine.

c—The Dean of the School of Medicine reserves the right to withhold his recommendation that a bachelor's degree be conferred at a commencement which occurs before the official release of first-year medical grades.

COST OF TRANSCRIPTS

16. Graduates will receive the first transcript of record without charge. Subsequent copies will cost one dollar each. Requests for transcripts must be filed with the Registrar's Office, University of Maryland, Lombard and Greene Streets, Baltimore-1, Maryland.

HOUSING

There are no housing or living accommodations on the campus of the medical school.

PARKING

Because of lack of space on the university parking lots no parking facilities are provided thereon for students.

LIBRARY REGULATIONS

Loan Regulations

Loan periods have been worked out according to demand for and protection of different types of material.

Two-Week Loans: All books except those on reserve.

Three-Day Loans: All journals except the latest number (which does not circulate), and those on reserve.

Overnight Loans: Books and journals on reserve.
(4 p.m.-10 a.m.)

Special Rules or Books on Reserve:

Students whose names appear on the check-list for the Mercy Hospital section will be granted the necessary hours to return reserve books.

Overnight books may be reserved in advance only within the week in which they will be used. Books may be reserved on Saturday for the following Monday.

Overnight books may not be reserved two successive nights by the same person. Advance reserves will be held until one hour before closing.

Fines

Fines are imposed not to acquire money, but to assure equal access to books.

Two-Week Loans: 5¢ per day.

Three-Day Loans: 5¢ per day.

Overnight Loans: 5¢ per hour.

Lost Books: List price of the book. (Lost books should be reported at once)

All books must be returned, lost books replaced or paid for, and fines paid before a student can finish the year in good standing.

In fairness to all concerned, these rules must be enforced without exception.

CERTIFICATION FOR STATE BOARD AND NATIONAL BOARD EXAMINATIONS

No student will be certified to State Board or National Board examiners who has unabsolved failures in subjects taken during the academic period covered by these examinations.

WITHDRAWALS AND REFUNDS

Formal Withdrawal Procedures

Students over 21 years of age desiring to leave the School of Medicine at any time during the academic year are required to file with the Dean a written application for withdrawal. In addition, the student must secure an "honorable dismissal release" form from the Dean's secretary, and return this to the Dean's office appropriately signed by representatives of the departments listed thereon, together with his "matriculation certificate."

If these procedures are not completed, the student will not be entitled to honorable dismissal nor to refund of fees.

Students under 21 years of age, must supplement the procedures previously described with the written consent of their parents or guardians.

Academic Standing On Withdrawal

Students who voluntarily withdraw during an academic semester will be given no credit.

Students are not permitted to resort to withdrawal in order to preclude current or impending failures. Their standing on withdrawal will be recorded in the registrar's office.

Students who withdraw from the School of Medicine, must apply to the Committee on Admissions for readmission, unless other arrangements have been consummated with the Dean's written consent.

Refunds on Withdrawal

Students who are eligible to honorable dismissal will receive a refund of current charges, after the matriculation fee has been deducted, according to the following schedule:

<i>Period elapsed after instruction begins.</i>	<i>Percentage refundable</i>
Two weeks or less.....	80%
Between two and three weeks.....	60%
Between three and four weeks.....	40%
Between four and five weeks.....	20%
After five weeks.....	0

PRIZES

THE FACULTY PRIZE

The faculty will award the gold medal and certificate and five certificates of honor to those six of the first ten highest ranking candidates for graduation who, during the four academic years, have exhibited outstanding qualifications for the practice of medicine.

THE DR. A. BRADLEY GAITHER MEMORIAL PRIZE

A prize of \$25.00 is given each year by Mrs. A. Bradley Gaither as a memorial to the late Dr. A. Bradley Gaither, to the student in the senior class doing the best work in genito-urinary surgery.

THE WILLIAM D. WOLFE MEMORIAL PRIZE

(Value \$100.00 each)

A certificate of proficiency and a prize of \$100.00 will be awarded each year until the fund is dissipated, to the graduate selected by the Faculty Board showing greatest proficiency in Dermatology.

SCHOLARSHIPS

All scholarships are assigned for one academic year, unless specifically reawarded on consideration of an application.

Official application forms are obtainable at the Dean's office, where they should be filed four months before the ensuing academic year.

THE DR. SAMUEL LEON FRANK SCHOLARSHIP

(Value \$100.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this university.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Faculty Board "to a medical student of the University of Maryland, who in the judgment of said Council, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school. No student may hold this scholarship for more than two years.

THE CHARLES M. HITCHCOCK SCHOLARSHIPS

(Value \$100.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the university.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Faculty Board, to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Board satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

THE RANDOLPH WINSLOW SCHOLARSHIP

(Value \$100.00)

This scholarship was established by the late Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Faculty Board, to a "needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Faculty Board that he is worthy of and in need of assistance."

THE DR. LEO KARLINSKY MEMORIAL SCHOLARSHIP

(Value \$125.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of the university.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon the nomination of the Faculty Board, to "a needy student of the Senior, Junior or Sophomore Class of the Medical School."

He must have maintained in all his work up to the time of awarding the scholarship a satisfactory grade of scholarship.

He must be a person of good character and must satisfy the Faculty Board that he is worthy of and in need of assistance.

THE UNIVERSITY SCHOLARSHIP

A scholarship which entitles the holder to exemption from payment of tuition fee for the year, is awarded annually by the Faculty Board to a student of the senior class in need of assistance who presents to the Faculty Board satisfactory evidence of good character and scholarship.

THE FREDERICA GEHRMANN SCHOLARSHIP

(Value \$200.00)

(Not open to holders of Warfield and Cohen Scholarships)

This scholarship was established by the bequest of the late Mrs. Frederica Gehrmann and is awarded to a third-year student who at the end of the second year has passed the best practical examinations in physiology, pharmacology, pathology, bacteriology, immunology, serology, surgical anatomy and neuro-anatomy.

THE CLARENCE AND GENEVRA WARFIELD SCHOLARSHIPS

(Value \$300.00 each)

There are five scholarships established by the regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships are available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the state of Maryland which the Faculty Board may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must agree, after graduation and a year's internship, to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited, or in a county selected by the Board. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Board, the money advanced by the regents shall be refunded by the student.

THE ISRAEL AND CECELIA E. COHEN SCHOLARSHIP

(Value \$150.00)

This scholarship was established by the late Eleanor S. Cohen in memory of her parents, Israel and Cecelia E. Cohen. Terms and conditions: This scholarship

will be available to students of any one of the classes of the course in medicine; preference is given to students of the counties in the state of Maryland which the Faculty Board may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Board, the money advanced by the regents shall be refunded.

THE DR. HORACE BRUCE HETRICK SCHOLARSHIP

(Value \$125.00)

This scholarship was established by Dr. Horace Bruce Hetrick as a memorial to his sons, Bruce Hayward Hetrick and Augustus Christian Hetrick. It is to be awarded by the Faculty Board to a student of the senior class.

THE HENRY ROLANDO SCHOLARSHIP

(Value approximately \$250.00)

The Henry Rolando Scholarship was established by the Board of Regents of the University of Maryland from a bequest to the Board by the late Anne H. Rolando for the use of the Faculty of Medicine.

This scholarship will be awarded each academic year on the recommendation of the Faculty Board to a "poor and deserving student."

THE READ SCHOLARSHIPS

The sum of \$500.00 is now available to cover two (2) scholarships in the amount of \$250.00 each for the scholastic year, beginning in 1945, as a donation from the Read Drug and Chemical Company of Baltimore, Maryland. Two students are to be selected by the Dean of the School in collaboration with the Scholarship and Loan Committee of the Medical School with the provision that the students selected shall be worthy, deserving students, residents of the State of Maryland.

LOAN FUNDS

W. K. KELLOGG FUND

This loan fund was established in the academic year 1942 with money granted by the W. K. Kellogg Foundation. The interest paid on the loans, together with the principal of the fund as repaid, will be used to found a rotating loan fund. Loans will be made on the basis of need, character and scholastic attainment.

FACULTY OF MEDICINE LOAN FUND

A Faculty of Medicine Loan Fund was established with money derived from the bequest of Dr. William R. Sanderson, Class 1882, and the gift of Dr. Albert Stein, Class 1907. Loans will be made on the basis of need, character, and scholastic ability.

THE JAY W. EATON LOAN FUND

This fund was established by the local chapter of the Nu Sigma Nu Fraternity in memory of Jay W. Eaton of the class of 1946.

Beginning in 1946 an interest-free loan of \$100.00 will be made to some worthy member of the senior class, on recommendation of the Scholarship Committee of the School of Medicine. This loan is to be credited to the tuition fee of the appointed student and is to be repaid by the student within four years following his graduation.

THE SENIOR CLASS LOAN FUND

The senior class of 1945 originated this fund which will accumulate by subscription from among members of each senior class.

The conditions of the agreement provide that the dean of the School of Medicine award a loan of \$100.00 to a needy member of the senior class on the recommendation of a self-perpetuating committee of two members of the faculty.

Loans from this fund are to be credited to the tuition fee of the appointed student and are to be repaid within five years from the date of graduation.

THE STUDENT AID FUND FOR SENIORS

This fund was originated by the class of 1950 and is sponsored by the senior class of each succeeding year. The purpose of the fund is to provide financial aid for any deserving member of the senior class. All members of the senior class are eligible to apply for a loan. Applications may be filed at the office of the dean.

The conditions of the agreement provide that the Scholarship and Loan Committee award loans to members of the senior class on recommendation of a self-perpetuating committee of two members of the faculty who may call on the president of the senior class for assistance, if desired.

Loans from this fund are made on a non-interest bearing basis and are payable within five years. A signed note is required. No co-signers are necessary.

ORGANIZATION OF THE CURRICULUM

The curriculum is organized under thirteen departments.

1. Anatomy.
2. Physiology.
3. Bacteriology and Immunology.
4. Biological Chemistry.
5. Pharmacology and Materia Medica.
6. Pathology.
7. Medicine (including Medical Specialties).
8. Surgery (including Surgical Specialties).
9. Obstetrics.
10. Gynecology.
11. Ophthalmology.
12. Roentgenology.

13. Anaesthesiology.
14. Psychiatry.
15. Pediatrics.

The instruction is given in four academic years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures, functions and chemistry of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in medicine and surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insure attention to the requirements of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

DEPARTMENT OF ANATOMY

EDUARD UHLENHUTH.....	Professor of Anatomy, and Head of the Department
FRANK H. J. FIGGE.....	Professor of Anatomy
O. G. HARNE.....	Associate Professor of Anatomy
VERNON E. KRAHL.....	Associate Professor of Anatomy
R. DALE SMITH.....	Associate Professor of Anatomy
JOHN F. LUTZ.....	Assistant Professor of Anatomy
KARL F. MECH.....	Associate in Anatomy
V. V. BRUNST.....	Research Associate
GERALDINE F. WOLFE.....	U.S.P.H. Fellow
RUSSELL L. CHRISTOPHER.....	Weaver Fellow in Anatomy ¹
DEWITT T. HUNTER.....	Weaver Fellow in Anatomy ¹
WILLIAM E. LOECHEL.....	Fellow in Anatomy ^{1a}
OTTO C. BRANTIGAN.....	Professor of Surgical Anatomy
W. WALLACE WALKER.....	Associate Professor of Surgical Anatomy
WILLIAM B. SETTLE.....	Assistant Professor of Surgical Anatomy
HERBERT E. REIFSCHNEIDER.....	Associate in Surgical Anatomy
HENRY L. RIGDON.....	Associate in Surgical Anatomy
HARRY C. BOWIE.....	Instructor in Surgical Anatomy
ROSS Z. PIERPONT.....	Instructor in Surgical Anatomy

GROSS ANATOMY. *First Year.* First semester. The gross structure of the human body, studied by dissection of the human cadaver. The entire human body is dissected. Approximately 390 hours; of these 88 hours are devoted to lectures and conferences, the rest to laboratory work and demonstrations. Drs. Uhlenhuth, Krahl, Smith and Mech.

First Year. First Semester. Peripheral Nervous System. A lecture course

¹ June 1st to August 31st, 1949.

^{1a} July 1 to Aug. 31, 1949.

of approximately 32 hours, in two-hour periods each Saturday morning. Dr. Uhlenhuth.

First Year. First Semester. The Microscopic Structure of the Organs, Tissues and Cells of the Human Body.

This course will present an integrated study of the histology and embryology of the human body. While much of the time is devoted to the study of fixed and stained non-living tissues and organs, the development of a concept of the dynamic and functional aspects of living cells and organs is the primary goal of the course. 150 hours. Dr. Figge, Prof. Harne and Dr. Lutz.

First Year. Second Semester. The Central Nervous System. The study of the detailed anatomy of the central nervous system will be coordinated with the structure and function of the entire nervous system. This study will require the dissection of a human brain and the examination of stained microscopic sections of various levels of the brain stem. 100 hours. Dr. Figge, Prof. Harne, Dr. Lutz.

Second Year. Second Semester. Topographic and Surgical Anatomy. The course is designed to bridge the gap between abstract anatomy and clinical anatomy as applied to the study and practice of medicine and surgery. Students are required to dissect and demonstrate all points, outlines and regions of the cadaver. Underlying regions are dissected to bring out outlines and relations of structures. Dr. Brantigan and staff.

Total hours: 96

GRADUATE AND POSTGRADUATE COURSES. Consult the general catalog of the University of Maryland for descriptions of these courses.

DEPARTMENT OF PHYSIOLOGY

WILLIAM R. AMBERSON Professor of Physiology, and Head of the Department
DIETRICH CONRAD SMITH Professor of Physiology
FREDERICK P. FERGUSON Assistant Professor of Physiology
SYLVIA HIMMELFARB Assistant in Physiology
FRANCES C. BROWN Assistant in Physiology
RAYMOND F. KLINE Porter Fellow in Physiology

The work in physiology is given in two separate courses:

First Year. Second Semester. A course in neuro-muscular physiology is presented in two lectures a week, without laboratory work.

Second Year. First Semester. The remainder of the subject is presented in four lectures, one conference, and two laboratory periods a week.

The fundamental concepts of physiology are presented with special reference to mammalian problems.

Total hours: 224.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

FRANK W. HACHTEL Professor of Bacteriology and Head of the Department
EDWARD STEERS Associate Professor of Bacteriology

ANDREW G. SMITH.....	Assistant Professor of Bacteriology
H. EDMUND LEVIN.....	Associate in Bacteriology
HAZEL Y. PRUITT.....	Assistant in Bacteriology

Second Year. First Semester. The principles of general bacteriology are taught by quiz, conference, and lecture.

Instruction given in the laboratory includes the methods of preparation of culture media, the study of pathogenic bacteria, and the bacteriological examination of water and milk. The bacteriological diagnosis of communicable diseases is also included.

Second Year. Second Semester. The principles of immunology are presented by means of quizzes, conferences and lectures.

The course includes a consideration of infection and immunity, the nature and action of the various antibodies, complement fixation and flocculation tests, hypersensitiveness, and the preparation of bacterial vaccines.

Experiments are carried out by the class in the laboratory. During the latter half of the semester the class is divided into sections.

Total hours: Bacteriology 120.

Immunology 72.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF BIOLOGICAL CHEMISTRY

EMIL G. SCHMIDT.....	Professor of Biological Chemistry and Head of the Department
EDWARD J. HERBST.....	Assistant Professor of Biological Chemistry
WILLIAM H. SUMMERSON.....	Lecturer in Biological Chemistry
ANN VIRGINIA BROWN.....	Instructor in Biological Chemistry
MARGARET E. MELLOTT.....	Instructor in Biological Chemistry
JANE F. BEARDSLEY.....	Research Assistant in Biological Chemistry
DOROTHY D. HUBBARD.....	Weaver Fellow in Biological Chemistry

First Year. Second Semester. This course is designed to present the principles of biological chemistry and to indicate their applications to the clinical aspects of medicine. The phenomena of living matter and its chief ingredients, secretions and excretions are discussed in lectures and conferences and examined experimentally. Training is given in biochemical methods of investigation. Total hours: 208.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF PHARMACOLOGY

JOHN C. KRANTZ, JR.....	Professor of Pharmacology and Head of the Department
C. JELLEFF CARR.....	Associate Professor of Pharmacology
HARRY K. IWAMOTO.....	Assistant Professor of Pharmacology
RUTH MUSSER.....	Instructor in Pharmacology
JOSEPH G. BIRD.....	Assistant and Fellow in Pharmacology
AMEDEO S. MARRAZZI.....	Lecturer in Pharmacology
WILLIAM G. HARNE.....	Demonstrator in Pharmacology
FREDERICK K. BELL.....	U. S. Pharmacopoeia Fellow

MARY S. FASSEL.....	Emerson Fellow in Pharmacology
JOHN B. HARMON.....	Emerson Fellow in Pharmacology
EDWARD B. TRUITT, JR.....	Markle Fellow in Pharmacology
RAYMOND M. BURGISON.....	Fellow in Pharmacology
CHI CHAN LING.....	Ohio Chemical Co., Fellow in Pharmacology

This course is designed to include those phases of pharmacology necessary for an intelligent use of drugs in the treatment of disease. The didactic instruction includes materia medica, pharmacy, prescription-writing, toxicology, posology, pharmacodynamics, and experimental therapeutics. The laboratory exercises parallel the course of lectures.

In addition, optional conference periods and lectures are available for students desiring further instruction or advice.

Total hours: 216.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

DEPARTMENT OF PATHOLOGY

HUGH R. SPENCER.....	Professor of Pathology and Head of the Department
ROBERT B. WRIGHT.....	Associate Professor of Pathology
C. GARDNER WARNER.....	Associate Professor of Pathology
WALTER C. MERKEL.....	Associate Professor of Pathology
DEXTER L. REIMANN.....	Associate Professor of Pathology
JOHN A. WAGNER.....	Associate Professor of Pathology
ALBERT E. GOLDSTEIN.....	Assistant Professor of Pathology
MILTON S. SACKS.....	Associate in Pathology
BENEDICT SKITARELIC.....	Associate in Pathology
LEON FREEDOM.....	Associate in Pathology
CONRAD B. ACTON.....	Instructor in Pathology
HOWARD B. MAYS.....	Instructor in Pathology
EPHRAIM T. LISANSKY.....	Instructor in Pathology
D. McCLELLAND DIXON.....	Instructor in Pathology
WILLIAM B. VANDEGRIFT.....	Instructor in Pathology
WILLIAM J. BRYSON.....	Instructor in Pathology
KARL F. MECH.....	Instructor in Pathology
SEYMOUR W. RUBIN.....	Instructor in Pathology
RICHARD J. COLFER.....	Instructor in Pathology
DONALD E. FISHER.....	Instructor in Pathology
CHARLES P. BARNETT.....	Instructor in Pathology
THEODORE KARDASH.....	Instructor in Pathology
L. CALVIN GAREIS.....	Instructor in Pathology

Courses of instruction in pathology are given during the second and third years. The courses are based on the previous study of normal structure and function and aim to outline the history of disease. The relationship between clinical symptoms and anatomical lesions is constantly stressed.

GENERAL PATHOLOGY. *Second Semester, Second Year.* This course includes the study of disturbances of the body fluids; disturbances of structure, nutrition and metabolism of cells; disturbances of fat, carbohydrate and protein metabolism; disturbances of pigment metabolism; inflammation and tumors.

Laboratory instruction is based on the study of prepared slides (loan collection) and corresponding gross material.

APPLIED PATHOLOGY, INCLUDING GROSS MORBID ANATOMY AND MORBID PHYSIOLOGY. *Third Year.* The laboratory instruction in this course is carried out in small teaching museums where prepared specimens and material from autopsies with clinical histories and sections are available for study. For this work the class is divided into small groups. Clinical correlation is stressed.

AUTOPSIES. *Third Year.* Students in small groups attend autopsies at the morgues of the University Hospital and the Baltimore City Hospitals.

CLINICAL-PATHOLOGICAL CONFERENCE. (*Fourth Year.*) These exercises are held in collaboration with the Department of Medicine. Selected cases are discussed and autopsy findings are presented.

Second year.....	184 hours
Third year	160 hours
Fourth year.....	30 hours
Total.....	374 hours

DEPARTMENT OF MEDICINE

MAURICE C. PINCOFFS.....Professor of Medicine and Head of the Department
T. NELSON CAREY....Professor of Clinical Medicine and Chairman of the Department
of Medicine

G. CARROLL LOCKARD.....Professor of Clinical Medicine
THOMAS P. SPRUNT.....Professor of Clinical Medicine
H. RAYMOND PETERS.....Professor of Clinical Medicine
LOUIS A. M. KRAUSE.....Professor of Clinical Medicine
PAUL W. CLOUGH.....Associate Professor of Medicine
WALTER A. BAETJER.....Associate Professor of Medicine
WILLIAM S. LOVE, JR.....Associate Professor of Medicine
THOMAS C. WOLFF.....Associate Professor of Medicine
HOWARD M. BUBERT.....Associate Professor of Medicine
J. SHELDON EASTLAND.....Associate Professor of Medicine
MILTON S. SACKS.....Associate Professor of Medicine
LEWIS P. GUNDRY.....Associate Professor of Medicine
SAMUEL MORRISON.....Associate Professor of Medicine
THEODORE E. WOODWARD.....Associate Professor of Medicine
WILLIAM H. SMITH.....Associate Professor of Clinical Medicine
GEORGE MCLEAN.....Assistant Professor of Medicine
WETHERBEE FORT.....Assistant Professor of Medicine
FRANK J. GERAGHTY.....Assistant Professor of Medicine
H. VERNON LANGELUTTIG.....Assistant Professor of Medicine
SOL SMITH.....Assistant Professor of Medicine
EDWARD F. COTTER.....Assistant Professor of Medicine
SAMUEL LEGUM.....Associate in Medicine
ROBERT A. REITER.....Associate in Medicine
W. GRAFTON HERSPBERGER.....Associate in Medicine
MEYER W. JACOBSON.....Associate in Medicine
CONRAD B. ACTON.....Associate in Medicine
IRVING FREEMAN.....Associate in Medicine
FRANCIS G. DICKEY.....Associate in Medicine
C. EDWARD LEACH.....Associate in Medicine

LAWRENCE M. SERRA.....	Associate in Medicine
MARIE A. ANDERSCH.....	Associate in Medicine
HARRY M. ROBINSON, JR.	Associate in Medicine
WILLIAM K. WALLER.....	Associate in Medicine
EPHRAIM T. LISANSKY.....	Associate in Medicine
SAMUEL T. R. REVELL.....	Associate in Medicine
ARTHUR KARFGIN.....	Associate in Medicine
M. PAUL BYERLY.....	Associate in Medicine
HENRY W. D. HOLLJES.....	Associate in Medicine
S. EDWIN MULLER.....	Associate in Medicine
SIDNEY SCHERLIS.....	Associate in Medicine
HENRY J. MARRIOTT.....	Associate in Medicine
KURT LEVY.....	Associate in Medicine
DAVID TENNER.....	Instructor in Medicine
PHILIP D. FLYNN.....	Instructor in Medicine
EDWARD S. KALLINS.....	Instructor in Medicine
JOHN A. MYERS.....	Instructor in Medicine
WILLIAM G. HELFRICH.....	Instructor in Medicine
M. PAUL PADGET.....	Instructor in Medicine
LEON ASHMAN.....	Instructor in Medicine
JOSEPH E. MUSE, JR.....	Instructor in Medicine
DANIEL WILFSON, JR.....	Instructor in Medicine
WILLIAM H. KAMMER, JR.....	Instructor in Medicine
SAMUEL J. HANKIN.....	Instructor in Medicine
FREDERICK J. VOLLMER.....	Instructor in Medicine
LOUIS J. KROLL.....	Instructor in Medicine
JOHN R. DAVIS.....	Instructor in Medicine
JOHN Z. BOWERS.....	Instructor in Medicine
WILFRED H. TOWNSEND.....	Instructor in Medicine
ALVIN J. HARTZ.....	Instructor in Medicine
JAMES R. KARNS.....	Instructor in Medicine
ERNEST GUY.....	Instructor in Medicine
JOHN B. DEHOFF.....	Instructor in Medicine
EDMUND G. BEACHAM.....	Instructor in Medicine
JONAS COHEN.....	Instructor in Medicine
CHARLES E. BRAMBEL.....	Instructor in Medicine
WALTER KARFGIN.....	Instructor in Medicine
L. ANN HELLEN.....	Instructor in Medicine
AUDRY M. FUNK.....	Instructor in Medicine
MORRIS FINE.....	Assistant in Medicine
SAMUEL SNYDER.....	Assistant in Medicine
ROLLIN C. HUDSON.....	Assistant in Medicine
STEPHEN J. VAN LILL, 3RD.....	Assistant in Medicine
FRANKLIN E. LESLIE.....	Assistant in Medicine
THOMAS L. WORSLEY.....	Assistant in Medicine
ADAM SWISS.....	Assistant in Medicine
JOHN C. OSBORNE.....	Assistant in Medicine
WILLIAM G. FUSTING.....	Assistant in Medicine
STUART D. SUNDAY.....	Assistant in Medicine
JONAS COHEN.....	Assistant in Medicine

GENERAL OUTLINE

SECOND YEAR

Introduction to clinical medicine.

- (a) Introductory physical diagnosis. (1 hour a week, first semester; 2 hours a week, second semester.)
- (b) Medical clinics. (1 hour a week, second semester.)

THIRD YEAR

- I. The methods of examination (13 hours a week). (a) History taking. (b) Physical diagnosis. (c) Clinical pathology.

These subjects are taught and practiced in the hospital out-patient department and in the clinical laboratory.

- II. The principles of medicine (200 hours).

- (a) Lectures, clinics and demonstrations in general medicine, neurology, pediatrics psychiatry and preventive medicine.

FOURTH YEAR

The practice of medicine.

- I. Clinical clerkship on the medical wards. (26 hours a week for ten weeks.)

- (a) Responsibility, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases.

- (b) Ward classes in general medicine, the medical specialties, and therapeutics.

- II. Clinics in general medicine and the medical specialties.

(6 hours a week.)

- III. Dispensary work in the medical specialties.

- IV. Clinical-pathological conferences (1 hour a week).

MEDICAL DISPENSARY WORK

The medical dispensaries of both the Mercy and the University Hospitals are utilized for teaching in the third year. Each student spends two hours daily for ten weeks in dispensary work. The work is done in groups of four to six students under an instructor. Systematic history-taking is especially stressed. Physical findings are demonstrated. The student becomes familiar with the commoner acute and chronic disease processes.

PHYSICAL DIAGNOSIS

T. CONRAD WOLFF

Associate Professor of Medicine, and Head of the Department of Physical Diagnosis	
ROBERT A. REITER.	Associate in Medicine, in charge of Lower Respiratory Disease
SAMUEL LEGUM.	Associate in Medicine, in charge of Cardiovascular Disease
IRVING FREEMAN.	Associate in Medicine
GRAFTON HERSPERGER.	Associate in Medicine
KURT LEVY.	Associate in Medicine
LOUIS KROLL.	Instructor in Medicine
DANIEL WILFSON.	Instructor in Medicine
LEON ASHMAN.	Instructor in Medicine
JOSEPH MUSE.	Instructor in Medicine
SAMUEL HANKIN.	Instructor in Medicine

JOHN B. DEHOFF	Instructor in Medicine
ALVIN HARTZ	Instructor in Medicine
WILLIAM G. HELFRICH	Instructor in Medicine
STUART D. SUNDAY	Assistant in Medicine
THOMAS L. WORSLEY, JR.	Assistant in Medicine
ELIZABETH D. SHERRILL	Assistant in Medicine
WILLIAM H. FUSTING	Assistant in Medicine

The course in physical diagnosis starts with the first semester of the Sophomore year and ends with the termination of the second semester of the Junior year.

First Semester—Second Year—Lecture, one hour weekly covering the technique of history writing in the normal person and the mechanics of the physical signs elicited in the normal person through inspection, palpation, percussion and auscultation.

Second Semester—Second Year—Lecture, one hour weekly, covering the technique of history writing in cases involving disease, and the mechanics of pathological physical signs on inspection, palpation, percussion and auscultation.

In the third and fourth quarters small tutorial groups are formed, each under the direction of an instructor. Experience in physical examination of normal individuals is given in the third quarter for one afternoon weekly. In the fourth quarter the students become acquainted with abnormal signs through examination of hospital patients.

Third Year—a. The class is divided into four sections. Each section receives bedside instruction in physical diagnosis for seven weeks (2 hrs. daily). For this purpose small groups under an instructor are formed. The instruction is carried on in the Baltimore City Hospitals but in addition advantage is occasionally taken of the clinical opportunities in other institutions.

b. Lecture course (1 hr. weekly) covering the mechanisms of abnormal signs.

THERAPEUTICS

Third Year. General therapeutics and materia medica are taken up and an effort is made to familiarize the student with the practical treatment of disease. The special therapy of the chief diseases is then reviewed.

Fourth Year. Special consideration is given to the practical application of therapeutic principles in bedside teaching and the chief therapeutic methods are demonstrated.

Students attend therapeutic ward rounds once a week throughout their medical trimester.

TROPICAL MEDICINE

Certain phases of tropical medicine are considered in the course on clinical pathology. In addition, a course of lectures and demonstrations is given to the entire fourth year class.

TUBERCULOSIS

During the third year in connection with the instruction in physical diagnosis a practical course is given at the Municipal Tuberculosis Hospital. Stress is laid

upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

CARDIOLOGY

In the third year a series of lectures and clinics correlated with pathological studies is given the entire class.

During the fourth year an elective course in cardiology is offered at the Mercy Hospital. The course occupies one and one-half hours weekly. Physical diagnosis, electrocardiography and the therapeutic management of cardiac cases are stressed.

Elective out-patient work is available also to members of the fourth year class in the cardiac clinic of the University Hospital.

SYPHILIS

Third Year. During the third year the subject of syphilis is dealt with in the lecture course.

Fourth Year. An elective course in the therapeutic management of syphilis is offered in the dispensary.

CLINICAL PATHOLOGY

MILTON S. SACKS.....	Associate Professor of Medicine and Head of the Department of Clinical Pathology
SOL SMITH.....	Assistant Professor of Medicine
MARIE A. ANDERSCH.....	Biochemist, University Hospital, Associate in Medicine
S. EDWIN MULLER.....	Associate in Medicine
JOHN A. WAGNER.....	Assistant in Medicine
L. ANN HELLEN.....	Instructor in Medicine
AUDREY M. FUNK.....	Instructor in Medicine
C. L. SPURLING.....	Baltimore RH Laboratory Fellow in Medicine
JOSEPH A. GUILBEAU, JR.....	Baltimore Rh Laboratory Fellow in Obstetrics

Third Year. First and second semesters. The course in Clinical Pathology is designed to train the student in the third year in the performance and interpretation of fundamental diagnostic laboratory procedures used in clinical medicine.

During the first semester the work is devoted to a thorough consideration of diseases of the hematopoietic system. In the second semester, in connection with laboratory work in urinalysis, gastric analysis, hepatic, pancreatic and renal functions, thorough discussion of underlying biochemical and physiological mechanisms is undertaken. During this semester examination of cerebrospinal fluid, transudates and exudates is also included. Elements of clinical parasitology round out the work in this semester.

Each student provides his own microscope and blood counting equipment. A completely equipped locker is assigned to every student.

Total Hours: 128.

Fourth Year. During the fourth year the student applies in the laboratories of the various affiliated hospitals the knowledge acquired during the preceding year. A completely equipped locker is assigned enabling him to work independently of

the general laboratories. Instructors are available during certain hours to give necessary assistance and advice.

GASTRO-ENTEROLOGY

THEODORE H. MORRISON.....	Clinical Professor of Gastro-Enterology
SAMUEL MORRISON.....	Associate Professor of Gastro-Enterology
MAURICE FELDMAN.....	Assistant Professor of Gastro-Enterology
ZACHARIAH MORGAN.....	Assistant Professor of Gastro-Enterology
FRANCIS G. DICKEY.....	Associate in Medicine
Z. VANCE HOOPER.....	Associate in Gastro-Enterology
ALBERT J. SHOCHAT.....	Instructor in Gastro-Enterology
ALFRED S. LEDERMAN.....	Assistant in Gastro-Enterology

Third Year. A series of six lectures is given on the diseases of the digestive tract.

Fourth Year. Clinics and demonstrations are given to the class for one hour a week; dispensary instruction to small groups throughout the entire session. Practical instruction is given in the use of modern methods of study of the diseases of the gastro-intestinal tract.

DEPARTMENT OF PSYCHIATRY

JACOB E. FINESINGER.....	Professor of Psychiatry and Head of the Department
H. WHITMAN NEWELL.....	Associate Professor of Psychiatry
HARRY M. MURDOCK.....	Assistant Professor of Psychiatry
PHILIP S. WAGNER.....	Assistant Professor of Psychiatry
HANS W. LOEWALD.....	Assistant Professor of Psychiatry
WILLIAM W. ELGIN.....	Assistant Professor of Psychiatry
J. G. N. CUSHING.....	Assistant Professor of Psychiatry
KATHRYN L. SCHULTZ.....	Assistant Professor of Psychiatry
ISADORE TUERK.....	Associate in Psychiatry
KATHRYN DICE.....	Associate in Clinical Psychology
ELIZABETH LAFORGE.....	Associate in Psychiatric Social Work
A. RUSSELL ANDERSON.....	Instructor in Psychiatry
FRANCIS J. McLAUGHLIN.....	Instructor in Psychiatry
SAMUEL NOVEY.....	Instructor in Psychiatry
RICHARD H. PEMBROKE, JR.....	Instructor in Psychiatry
PHOEBE RICH.....	Instructor in Psychiatric Social Work
MARCELLA WEISMAN.....	Assistant in Psychiatric Social Work
ELIZABETH SMITH.....	Assistant in Psychiatric Social Work
RUTH RABINOVITCH.....	Fellow in Psychiatry
SUZANNE MOHLER.....	Fellow in Clinical Psychology
WILLIAM STARK.....	Fellow in Psychiatry
MARION A. MARFY.....	Fellow in Clinical Psychology

First Year. The 16 lecture hours will be devoted largely to a discussion of factors influencing the formation of character and the deviations in personality falling within the range of "normal." The usual endogenous and environmental experiences which provide critical periods during the life of an individual will be

chronologically presented. Basic psychological concepts and psycho-dynamics will be reviewed. The methods of psychiatry with reference to the life history, mental status examination, and psychometric testing will be outlined and demonstrated.

Second Year. Fourteen 2-hour lecture demonstrations on psychopathology will introduce the student to personality deviations considered "abnormal." The mental status examination will be demonstrated in detail. The major and minor psychoses will be presented in terms of the psycho-dynamics of symptoms and reaction types. The student will be expected, at the conclusion of the year, to be familiar with the psychopathology and clinical characteristics of the usual psychiatric problems.

Third Year. The 16 lecture hours will be devoted to further considerations of special psychopathology and the principles of psychotherapy. Specialized forms of treatment will be reviewed, but the main emphasis will be toward familiarizing the student with forms of therapy feasible in routine medical practice. During the 36 clinic hours the student will be supervised in history-taking, mental status and psychometric examination, and follow-up studies of patients.

Fourth Year. A series of 10 lecture demonstrations will serve to summarize previous instruction and to appraise the student's insight into psychopathology, the recognition of clinical syndromes, and their management. Characteristic reaction types will be demonstrated and discussed largely as concerns probable etiology and possible preventive measures. The relationship of mental illness to the major problems of social upheaval, economic, and other sources of insecurity will be considered.

DEPARTMENT OF PEDIATRICS

J. EDMUND BRADLEY.....	Professor of Pediatrics and Head of the Department
C. LORING JOSLIN.....	Professor of Pediatrics
EDGAR B. FRIEDENWALD.....	Professor of Clinical Pediatrics
A. H. FINKELSTEIN.....	Associate Professor of Pediatrics
FREDERICK B. SMITH.....	Associate Clinical Professor of Pediatrics
ALBERT JAFFE.....	Associate Clinical Professor of Pediatrics
SAMUEL S. GLICK.....	Assistant Professor of Pediatrics
JEROME FINEMAN.....	Assistant Professor of Pediatrics
GIBSON J. WELLS.....	Assistant Professor of Pediatrics
WILLIAM M. SEABOLD.....	Assistant Professor of Pediatrics
CLEWELL HOWELL.....	Associate in Pediatrics
G. BOWERS MANSDORFER.....	Associate in Pediatrics
ARNOLD F. LAVENSTEIN.....	Instructor in Pediatrics
MARY L. HAYLECK.....	Instructor in Pediatrics
ISRAEL P. MERANSKI.....	Instructor in Pediatrics
MELCHIJAH SPRAGINS.....	Instructor in Pediatrics
THOMAS A. CHRISTENSEN.....	Instructor in Pediatrics
JOSEPH M. CORDI.....	Instructor in Pediatrics
WILLIAM EARL WEEKS.....	Assistant in Pediatrics
J. CARLTON WICH.....	Assistant in Pediatrics
O. WALTER SPURRIER.....	Assistant in Pediatrics
JOSEPH M. CORDI.....	Assistant in Pediatrics

A. MAYNARD BACON, JR.....	Assistant in Pediatrics
DONALD D. COOPER.....	Assistant in Pediatrics
SARAH COOK.....	Fellow in Pediatrics

Third Year. The course is presented as follows:

Lectures on infant feeding and the fundamentals of diseases of infants and children. (15 hours.)

Lectures on contagious diseases in conjunction with the Department of Hygiene and Preventive Medicine. (14 hours.)

A special course in physical diagnosis is given at City Hospitals. (20 hours.)

Clinical conferences demonstrating diseases of the new-born. (6 hours.)

Fourth Year. An amphitheatre clinic is given at which patients are shown to demonstrate the features of the diseases discussed. (30 hours.)

Conferences and demonstrations are given in problems concerning diagnosis, care, treatment and clinical pathology of the diseases of infants and children. (30 hours.)

Students are assigned subjects for the preparation of theses.

Clinical clerkships are assigned on the pediatric wards, where experience is gained in taking histories, making physical examinations, doing routine laboratory work, and following up the patients' progress. This is under the supervision of the visiting staff. (140 hours.)

Instruction is given in the pediatric clinic of the out-patient department of the University Hospital. This consists of 1½ hours daily for five weeks—30 minutes each day being devoted to a clinical demonstration of some interesting case by a member of the staff; one hour daily to taking histories and making physical examinations under supervision of one of the staff instructors. (45 hours.)

Total hours: 300.

NEUROLOGY

LEON FREEDOM.....	Associate Professor of Neurology
PHILIP F. LERNER.....	Assistant Professor of Neurology
WILLIAM L. FEARING.....	Associate in Neurology
EDWARD F. COTTER.....	Associate in Neurology
HARRY TEITELBAUM.....	Associate in Neurology

Second Year. Fifteen one-hour lectures are given to correlate the anatomy and physiology of the nervous system with clinical neurology.

Third Year. Twenty hours of instruction are given to the whole class in neuropathology supplemented with pathological demonstrations. Sixteen lecture-demonstrations are given in which the major types of the diseases of the nervous system are discussed. A course is also given at the Baltimore City Hospitals, comprising eight periods of two hours each, in which the students in small groups carry out complete neurological examinations of selected cases which illustrate the chief neurological syndromes.

Fourth Year. A clinical conference one hour each week is given to the whole class at the University and Mercy Hospitals. All patients presented at these clinics are carefully examined. Complete written records are made by the stu-

dents who demonstrate the patients before the class. The patients are usually assigned one or two weeks before they are presented, and each student in the class must study and present one or more patients during the year.

Ward Class Instruction. Nine hours of instruction are given to each student in small sections at the University and Mercy Hospitals. In these classes the students come in close personal contact with the patients in the wards under the supervision of the instructor.

Dispensary Instruction. Small sections are instructed in the dispensaries of the University and Mercy Hospitals five afternoons each week. In this way students are brought into contact with nervous diseases in their early and late manifestations.

HYGIENE AND PUBLIC HEALTH

HUNTINGTON WILLIAMS..... Professor of Hygiene and Public Health
 WILLIAM H. F. WARTHEN..... Associate Professor of Hygiene and Public Health
 ROSS DAVIES..... Associate Professor of Hygiene and Public Health
 HORACE HODES..... Associate Professor of Hygiene and Public Health

Third Year. A one-hour lecture is given to the whole class each Tuesday during both semesters. Basic instruction is afforded in the clinical and public health aspects of the communicable diseases including syphilis and tuberculosis. The lectures are under the auspices of the Department of Medicine and are given by staff members of that department, including physicians representing pediatrics, hygiene and public health, and by staff members of the Baltimore City Health Department.

Fourth Year. Elective work is also assigned at Sydenham Hospital, the one-hundred bed communicable disease hospital of the City Health Department, and at its Western Health District, 617 West Lombard Street, where the District Health Officer arranges for home visiting and the student prepares and presents a Home Survey Report.

The course deals with the fundamentals of public health and supplements the work in the third year. The major emphasis in both years is on the practice of preventive medicine and the relation of prevention to diagnosis and treatment, and on the civic and social implications of the medical services.

LEGAL MEDICINE

Third Year. This course embraces a summary of some of the following: Proceedings in criminal and civil prosecution, medical evidence and testimony, identity and its general relations, rape, criminal abortions, signs of death, wounds in their medico-legal relations, natural and homicidal death, malpractice, insanity, and medico-legal autopsies, including poisoning.

Total hours: 4.

DERMATOLOGY AND SYPHILOLOGY

HARRY M. ROBINSON, SR..... Professor of Dermatology
 FRANCIS A. ELLIS..... Assistant Professor of Dermatology

HARRY M. ROBINSON, JR.	Assistant Professor of Dermatology
EUGENE S. BERESTON	Associate in Dermatology
A. ALBERT SHAPIRO	Associate in Dermatology
ISRAEL ZELIGMAN	Associate in Dermatology
R. C. V. ROBINSON	Associate in Dermatology
LUCILE J. CALDWELL	Instructor in Dermatology
BENJAMIN HIGHSTEIN	Instructor in Dermatology
MARK B. HOLLANDER	Instructor in Dermatology
V. HARWOOD LINK	Assistant in Dermatology
MORRIS M. COHEN	Assistant in Dermatology

The third year class receives six lecture-demonstrations on the principles of dermatology by Dr. Robinson.

The senior course consists of demonstrations of the common skin diseases and venereal diseases given throughout the year by Dr. Robinson and staff. A weekly lecture-demonstration is given to the whole senior class by Dr. Robinson and Dr. Ellis.

Daily demonstrations and conferences are carried on by the out-patient staff in the dermatologic clinic involving both skin diseases and venereal diseases.

Third year	15 hours
Fourth Year	49 hours
Total	64 hours

DEPARTMENT OF SURGERY

CHARLES REID EDWARDS	Professor of Surgery, and Acting Head of the Department
WALTER D. WISE	Professor of Surgery
ELLIOTT H. HUTCHINS	Professor of Surgery
F. L. JENNINGS	Professor of Clinical Surgery
D. J. PESSAGNO	Professor of Clinical Surgery
GEORGE H. YEAGER	Professor of Clinical Surgery
MONTE EDWARDS	Clinical Professor of Surgery
OTTO C. BRANTIGAN	Professor of Clinical Surgery
HARRY C. HULL	Professor of Clinical Surgery
CHARLES A. REIFSCHNEIDER	Clinical Professor of Traumatic Surgery
THOMAS R. CHAMBERS	Associate Professor of Surgery
R. W. LOCHER	Associate Professor of Clinical Surgery
EDWARD S. JOHNSON	Associate Professor of Surgery
GRANT E. WARD	Associate Professor of Surgery
CYRUS F. HORINE	Associate Professor of Surgery
CHARLES W. MAXSON	Associate Professor of Surgery
C. W. PEAKE	Associate Professor of Surgery
JAMES W. NELSON	Associate Professor of Surgery
WILLIAM F. REINHOFF, JR.	Associate Professor of Surgery
I. RIDGEWAY TRIMBLE	Associate Professor of Surgery
W. WALLACE WALKER	Associate Professor of Surgery and Surgical Anatomy
H. F. BONGARDT	Assistant Professor of Surgery
I. O. RIDGELY	Assistant Professor of Surgery

SIMON H. BRAGER.....	Assistant Professor of Surgery and Proctology
THURSTON R. ADAMS.....	Assistant Professor of Surgery
RAYMOND F. HELFRICH.....	Associate in Surgery
WILLIAM B. SETTLE.....	Associate in Surgery
ARTHUR G. SIWINSKI.....	Associate in Surgery
GEORGE GOVATOS.....	Associate in Surgery
JOSEPH V. JERARDI.....	Associate in Surgery
HENRY L. RIGDON.....	Associate in Surgery
HERBERT E. REIFSCHNEIDER.....	Associate in Surgery
HAROLD H. BURNS.....	Associate in Surgery
WILLIAM L. GARLICK.....	Associate in Surgery
JOSEPH M. MILLER.....	Lecturer in Surgery
J. DUER MOORES.....	Instructor in Surgery
CALVIN HYMAN.....	Instructor in Surgery
CLYDE F. KARNS.....	Instructor in Surgery
DANIEL R. ROBINSON.....	Instructor in Surgery
GEORGE H. BROUILLET.....	Instructor in Surgery
HARRY C. BOWIE.....	Instructor in Surgery
STUART G. COUGHLAN.....	Instructor in Surgery
JOHN F. SCHAEFER.....	Instructor in Surgery
ROBERT F. HEALY.....	Instructor in Surgery
ROBERT C. SHEPPARD.....	Instructor in Surgery
SAMUEL E. PROCTOR.....	Instructor in Surgery
F. FORD LOKER.....	Instructor in Surgery
E. RODERICK SHIPLEY.....	Instructor in Surgery
EDWIN H. STEWART, JR.....	Instructor in Surgery
PATRICK C. PHELAN, JR.....	Instructor in Surgery
WILLIAM R. GERAGHTY.....	Assistant in Surgery
HOWARD B. McELWAIN.....	Assistant in Surgery
A. V. BUCHNESS.....	Assistant in Surgery
T. J. TOUHEY.....	Assistant in Surgery
SAMUEL H. CULVER.....	Assistant in Surgery
L. T. CHANCE.....	Assistant in Surgery
W. ALLEN DECKERT.....	Assistant in Surgery
WILLIAM C. DUNNIGAN.....	Assistant in Surgery
HOWARD L. ZUPNIK.....	Assistant in Surgery
RAYMOND M. CUNNINGHAM.....	Assistant in Surgery
JOHN W. CHAMBERS.....	Assistant in Surgery
ROSS Z. PIERPONT.....	Assistant in Surgery
MICHAEL L. DEVINCENTIS.....	Assistant in Surgery
LOUIS E. GOODMAN.....	Assistant in Surgery
ARLIE R. MANSBERGER, JR.....	Research Fellow in Surgery

Instruction is given by means of lectures, laboratory work, recitations, dispensary work, bedside instruction, ward classes, and clinics. The work begins in the second year and continues throughout the third and fourth years.

The teaching is done in the anatomical laboratory, operative surgery laboratory, the dispensaries, wards, laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and operating rooms of the Baltimore City Hospitals.

SECOND YEAR

TOPOGRAPHIC AND SURGICAL ANATOMY. *Second semester.* The course is designed to bridge the gap between anatomy in the abstract and clinical anatomy as applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory, and students are required to dissect and to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected to bring out outlines and relations of structures.

Two lectures and two laboratory periods per week. Drs. Brantigan, Walker, Settle, Bowie, H. E. Reifschneider, Rigdon, Brouillet and Pierpont.

Total hours: 96.

PRINCIPLES OF SURGERY. *Second semester.* This course includes discussions of irritants, infection, repair of tissue, healing of tissue, relationship of bacteriology to surgery, modern chemotherapy in surgical diseases, ulcers, wounds, thrombophlebitis, phlebothrombosis, peripheral vascular diseases, thermal burns, injuries due to cold, surgical shock, diseases of the lymphatics, gangrene of the skin and extremities, aneurysms, hemorrhage, varicose veins, embolism, sinuses and fistulae, tetanus, anthrax and actinomycosis.

Lectures, two hours a week for one semester, are given to the whole class. Drs. Adams and Sheppard.

THIRD YEAR

GENERAL AND REGIONAL SURGERY. Lectures, recitations and clinics on the principles of surgery, general surgery including fractures and dislocations are given three hours a week to the whole class. Dr. Hull.

The class is divided into groups and receives instruction in history-taking and surgical pathology under the supervision of the chief of the pathologic department of the Baltimore City Hospitals. Instruction is also given in surgical diagnosis and in general surgery at the bedside and in the classroom at this institution by Drs. Hull, C. A. Reifschneider, Brantigan and Adams. Two hours per week are given in orthopaedic surgery by Dr. Voshell, chief of the orthopaedic service of this institution.

OPERATIVE SURGERY. Two courses in operative surgery are given under the supervision of Dr. Yeager assisted by Drs. Brager, Deckert, Govatos, Gutman, Healy, F. C. Karns, Mech, Joseph Miller, Peake and Rigdon. The class is divided into sections and each section is given practical and individual work under the supervision of the instructors.

SURGICAL OUT-PATIENT DEPARTMENT. Under supervision, the student takes the history, makes the physical examination, attempts the diagnosis and, as far as possible, carries out the treatment of ambulatory surgical patients in the University and Mercy Hospitals. Mercy Hospital—Dr. Raymond F. Helfrich assisted by the out-patient staff. University Hospital—Drs. Settle and Sheppard assisted by the out-patient staff.

FOURTH YEAR

CLINICS. A weekly clinic is given at the Mercy and at the University Hospitals to one-half the class throughout the year. As far as possible this is a diagnostic clinic. Mercy Hospital—Dr. Wise. University Hospital—Dr. C. R. Edwards.

SURGICAL PATHOLOGY. At Mercy Hospital. Specimens from the operating room and museum are studied in the gross and microscopically in relation to the case history. 14 hours. Dr. Pessagno.

SURGERY OF THE CHEST. At Mercy Hospital. Operations and conferences. 14 hours. Drs. Rienhoff and Garlick.

TRAUMATIC SURGERY. This course deals with operative and post-operative treatment of accident cases and with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. C. A. Reifschneider.

CLINICAL CLERKSHIP. This work includes the personal study of assigned hospital patients, under supervision of the staffs of the University and Mercy Hospitals, and embraces history-taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

WARD CLASSES. Ward-class instruction in small groups will consist of ward rounds, surgical diagnosis, treatment and the after-care of operative cases. Mercy Hospital—Drs. Wise, Hutchins, Blake, Pessagno, Nelson, Trimble, Brager and Jerardi. University Hospital—Drs. C. Reid Edwards, Yeager, Hull and C. A. Reifschneider.

ORTHOPAEDIC SURGERY

ALLEN FISKE VOSHELL.....	Professor of Orthopaedic Surgery
HARRY L. ROGERS.....	Clinical Professor of Orthopaedic Surgery
MOSES GELLMAN.....	Associate Professor of Orthopaedic Surgery
HENRY F. ULLRICH.....	Associate Professor of Orthopaedic Surgery
MILTON J. WILDER.....	Assistant Professor in Orthopaedic Surgery
I. H. MASERITZ.....	Associate in Orthopaedic Surgery
JASON H. GASKEL.....	Instructor in Orthopaedic Surgery

Didactic, clinical, bedside and out-patient instruction is given in the fourth year at the University and Mercy Hospitals and Dispensaries, Kernan Hospital for Crippled Children at Dickeyville and Baltimore City Hospitals. Instruction is also given in the third year in small groups at the Baltimore City Hospitals.

Weekly lectures throughout the year present all phases of orthopaedic surgery except fractures; brief discussions and demonstration of physical and occupational therapy are included.

Fourth year groups are given more intimate instruction biweekly at one of the above institutions; fracture cases are included here.

Third year.....	60 hours
Fourth year.....	90 hours
Total.....	150 hours

RHINOLOGY AND LARYNGOLOGY

EDWARD A. LOOPER.....	Professor of Rhinology and Laryngology
WAITMAN F. ZINN.....	Clinical Professor of Rhinology and Laryngology

FRANKLIN B. ANDERSON.....	Associate Professor of Rhinology and Laryngology
THOMAS R. O'ROURK.....	Associate Professor of Rhinology and Laryngology
BENJAMIN S. RICH.....	Associate Professor of Rhinology and Laryngology
FREDERICK T. KYPER.....	Associate Professor of Rhinology and Laryngology
W. RAYMOND MCKENZIE.....	Assistant Professor of Rhinology and Laryngology
FAYNE A. KAYSER.....	Assistant Professor of Rhinology and Laryngology
THEODORE SCHWARTZ.....	Assistant Professor of Rhinology and Laryngology
SAMUEL L. FOX.....	Associate in Rhinology and Laryngology
BENJAMIN H. ISAACS.....	Associate in Rhinology and Laryngology
RICHARD J. CROSS.....	Instructor in Rhinology and Laryngology
JOHN H. HIRSCHFELD.....	Assistant in Rhinology and Laryngology
ROBERT Z. BERRY.....	Assistant in Rhinology and Laryngology
ROSS C. BROOKS.....	Assistant in Rhinology and Laryngology

Third Year. Instruction to whole class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures illustrated by lantern slides are given one hour weekly for seven weeks by Dr. Looper.

Fourth Year. Dispensary instruction is given for one and one-half hours daily, to small sections at the University and the Mercy Hospitals. The student is afforded an opportunity to study, diagnose and treat patients under supervision. Ward classes and clinical demonstrations are given in periods of one and one-half hours weekly throughout the session in the University and the Mercy Hospitals.

The Looper Clinic for bronchoscopy and esophagoscopy, recently established in the University Hospital, affords unusual opportunities for students to study diseases of the larynx, bronchi and esophagus. The clinic is open to students daily from 2 to 4 P.M. under direction of Dr. Looper.

The Mercy Hospital clinic for bronchoscopy and esophagoscopy is under the direction of Dr. Zinn. In these two clinics the etiology, symptomatology, diagnosis and treatment of foreign bodies in the air and food passages, as well as bronchoscopy, are taught to students as an aid in the diagnosis and treatment of diseases of the lungs.

Third year.....	9 hours
Fourth year.....	53 hours
Total.....	62 hours

GENITO-URINARY SURGERY

W. HOUSTON TOULSON.....	Professor of Genito-Urinary Surgery
KENNETH D. LEGGE.....	Professor of Clinical Genito-Urinary Surgery
HOWARD B. MAYS.....	Assistant Professor of Genito-Urinary Surgery
FRANCIS W. GILLIS.....	Assistant Professor of Genito-Urinary Surgery
JOHN F. HOGAN.....	Assistant Professor of Genito-Urinary Surgery
AUSTIN H. WOOD.....	Associate in Genito-Urinary Surgery
LYLE J. MILLAN.....	Associate in Genito-Urinary Surgery
L. K. FARGO.....	Associate in Genito-Urinary Surgery
HUGH J. JEWETT.....	Associate in Genito-Urinary Surgery
JOHN S. HAINES.....	Instructor in Genito-Urinary Surgery
CHARLES W. HAWKINS.....	Assistant in Genito-Urinary Surgery
MORRIS A. FINE.....	Assistant in Genito-Urinary Surgery

Third Year. This course is given for seven hours to the whole class. It consists of lectures and demonstrations, including the use of lantern slides and motion pictures. Dr. Toulson.

Fourth Year. The course in this year includes explanations and demonstrations of urethroscopy, cystoscopy, ureteral catheterization, renal function tests, urography, urine cultures and the various laboratory procedures. The teaching consists of clinics and ward rounds to small groups, and attendance by members of the senior class upon the out-patients in the dispensary. The student here is placed much on his own responsibility in arriving at a diagnosis. These dispensary classes are conducted at both the Mercy and University Hospitals where practically every variety of urogenital disease is seen and used for teaching purposes.

Third year.....	6 hours
Fourth year.....	39 hours
Total.....	45 hours

PROCTOLOGY

MONTE EDWARDS.....	Professor of Proctology
THURSTON R. ADAMS.....	Assistant Professor of Proctology
SIMON H. BRAGER.....	Assistant Professor of Proctology
DONALD B. HEBB.....	Instructor in Proctology
WILLIAM T. SUPIK.....	Instructor in Proctology
RAYMOND M. CUNNINGHAM.....	Instructor in Proctology

Third Year. Seven lectures are given to the whole class. This course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and covers the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Monte Edwards.

Fourth Year. Ward and dispensary instruction is given in the University and Mercy Hospitals, where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope in the examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Drs. Blake and Brager. University Hospital—Drs. Monte Edwards and Adams.

Third year.....	7 hours
Fourth year.....	16 hours
Total.....	23 hours

OTOLOGY

THOMAS R. O'ROURK.....	Clinical Professor of Otology
FRANKLIN B. ANDERSON.....	Associate Professor of Otology
BENJAMIN S. RICH.....	Associate in Otology
FREDERICK T. KYPER.....	Associate in Otology
SAMUEL L. FOX.....	Associate in Otology
RICHARD J. CROSS.....	Instructor in Otology

The course in otology is planned to give a practical knowledge of the anatomy and physiology of the ear, and its proximity and relationship to the brain and other vital structures. The inflammatory diseases, their etiology, diagnosis, treatment

and complications are particularly stressed, with emphasis upon their relationship to the diseases of children, head-surgery and neurology.

Third Year. The whole class is given instruction by means of talks, anatomical specimens and lantern slides.

Fourth Year. Small sections of the class receive instruction and make personal examinations of patients under the direction of an instructor. The student is urged to make a routine examination of the ear in his ward work in general medicine and surgery.

Third year.....	12 hours
Fourth year.....	40 hours
Total.....	52 hours

NEUROLOGICAL SURGERY

CHARLES BAGLEY, JR.....	Professor of Neurological Surgery
RICHARD G. COBLENTZ.....	Professor of Clinical Neurological Surgery
JAMES G. ARNOLD, JR.....	Associate Professor of Neurological Surgery
JOHN A. WAGNER.....	Associate Professor of Pathology and Neuropathology
RAYMOND K. THOMPSON	

Instructor in Neurological Surgery, Director of Neurological Surgery Research	
FRANK J. OTENASEK.....	Assistant in Neurological Surgery
JOHN W. CHAMBERS.....	Assistant in Neurological Surgery
ROBERT M. N. CROSBY.....	Hitchcock Fellow in Neurological Surgery Assigned to Research
J. POMEROY NICHOLS.....	Hoffberger Fellow, Neurological Surgery
LOUIS O. J. MANGANIELLO.....	Resident in Neurological Surgery
JOSÉ A. ALVAREZ.....	Assistant Resident in Neurological Surgery
GEORGE W. SMITH	

Assistant Resident, Baltimore City Hospitals, Assigned to Neurological Surgery

Third year. The course covers instruction in diagnosis and treatment of surgical conditions of the brain, spinal cord and the peripheral nerves. Drs. Bagley, Coblentz, Arnold and Thompson.

Fourth year. Weekly ward rounds and conferences are given at the University Hospital. Drs. Bagley, Coblentz, Arnold and Thompson. Instruction is given (elective) in the out-patient dispensary by Drs. Louis Manganiello, George Smith and José A. Alvarez.

Third year.....	12 hours
Fourth year.....	15 hours
Conference and ward rounds (elective).....	32 hours
Neurological Surgery Dispensary (elective).....	48 hours
Total.....	107 hours

ONCOLOGY

J. MASON HUNDLEY, JR.....	Professor of Gynecology
GRANT E. WARD.....	Associate Professor of Surgery
BEVERLEY C. COMPTON.....	Assistant Professor of Gynecology
JOHN C. DUMLER.....	Assistant Professor of Gynecology

WILLIAM K. DIEHL.....	Assistant Professor of Gynecology
EVERETT S. DIGGS.....	Assistant Professor of Gynecology
ERNEST I. CORNBROOKS, JR.....	Assistant Professor of Gynecology
ARTHUR G. SIWINSKI.....	Associate in Surgery
EDWIN H. STEWART.....	Instructor in Surgery
J. DUER MOORES.....	Instructor in Surgery
LOUIS F. GOODMAN.....	Assistant in Surgery
ROBERT G. CHAMBERS.....	National Cancer Institute Trainee
HAROLD P. BIEHL.....	National Cancer Institute Trainee
E. EUGENE COVINGTON.....	Assistant Radiologist

The purpose of the courses in Oncology is to give students training in the diagnosis and treatment of neoplastic diseases not obtained in other departments and at the same time to correlate this training with that received in surgery, medicine, roentgenology and other specialties.

Third Year: An out-patient clinic is held once weekly, which affords an opportunity for instruction in small groups of students assigned in rotation from the general surgical and gynecological sections. The gynecological problems are under the supervision of Dr. Hundley and the general surgical conditions are under the direction of Dr. Ward.

In addition to dispensary work, five lectures in general oncology are given by Dr. Ward and staff to the entire class at the end of the year. The increasing importance of the cancer problem throughout the State, Nation and civilized world is emphasized. The biological aspects of cancer and the relation of hormones, carcinogenic agents, and etiological factors are reviewed. The histological classifications and gradation of neoplasms are outlined and the biophysical effects of irradiation therapy discussed. The diagnosis, surgical and radiological treatment of neoplasms of the head and neck, oral cavity, skin, breasts, and hemopoietic system are also discussed. Physics and practical application of radium is given. The diagnosis and treatment, both surgical and radiological, of neoplasms of the head and neck, oral cavity, skin, breasts and hemopoietic system are also covered.

Fourth Year: Each ward class meets for one and one-half hours once a week for five weeks with Dr. Ward and staff for demonstration and discussion of patients with neoplastic diseases.

Dr. Hundley and staff give instructions in the diagnosis and treatment of cancer of the generative organs during the regular gynecological courses in addition to the above mentioned dispensary instruction.

Third year.....	8 hours
Fourth year.....	16 hours
Total.....	<u>24 hours</u>

DENTISTRY

¹ BRICE M. DORSEY.....	Professor of Oral Surgery
¹ MYRON S. AISENBERG.....	Professor of Pathology

¹ Faculty Member, School of Dentistry.

¹ JOSEPH C. BIDDIX, JR.	Professor of Oral Diagnosis
¹ KYRLE W. PREIS	Professor of Orthodontics
¹ HARRY M. ROBINSON, SR.	Professor of Dermatology
¹ GRAYSON W. GAVER	Professor of Dental Prosthesis
¹ ERNEST B. NUTTALL	Professor of Crown and Bridge
¹ KENNETH V. RANDOLPH	Professor of Operative Dentistry
¹ EDWARD C. DOBBS	Professor of Pharmacology
GEORGE H. YEAGER	Professor of Clinical Surgery
GRANT E. WARD	Associate Professor of Surgery and Oral Surgery
¹ HUGH H. HICKS	Associate Professor of Periodontology
¹ LEWIS C. TOOMEY	Associate Professor of Oral Surgery
GEORGE McLEAN	Assistant Professor of Medicine
¹ WILBUR O. RAMSAY	Assistant Professor of Clinical Dental Prosthesis
¹ SAMUEL H. BRYANT	Instructor in Oral Diagnosis
¹ RUSSELL GIGLIOTTI	Instructor in Clinical Oral Diagnosis
¹ JOSEPH P. CAPPUCIO	Instructor in Oral Surgery
¹ CONRAD L. INMAN	Instructor in Anesthesiology

This section has been reorganized for the teaching of both medical and dental students. There has been established a division in the out-patient department, and beds will be provided in the University Hospital, for the care of patients who will be available for the teaching of students from both schools.

Senior year: clinics weekly.

Ward instruction and group teaching are given. This includes diagnosis and treatment of diseases of the face, mouth and jaws.

INDUSTRIAL MEDICINE AND SURGERY

G. CARROLL LOCKARD	Professor of Clinical Medicine
CHARLES A. REIFSCHNEIDER	Clinical Professor of Traumatic Surgery
THURSTON R. ADAMS	Assistant Professor of Surgery

This section is under the combined supervision of the medical and surgical departments. It is a cooperative effort by members of the medical school and hospital staff to afford means for clinical and laboratory study of the patient who has been subjected to traumatic or medical industrial hazard, so that adequate care may be instituted to promote his physical well-being. The facilities of the laboratories of the medical school and hospital are available as required.

Under direction of this department limited undergraduate instruction is given, especially in the methods of examination and of keeping records and in the general medico-legal principles as they affect the industrial employee, the employer, the general insurers, the physician and the hospital. There is also instruction on methods of making life insurance and other physical examinations, whether for employment or for health purposes. The wards of the University, Mercy and Baltimore City Hospitals provide for bed-side instruction.

Total hours: 48.

¹ Faculty Member, School of Dentistry.

PLASTIC SURGERY

EDWARD A. KITLOWSKI.....	Clinical Professor of Plastic Surgery
CLARENCE P. SCARBOROUGH.....	Instructor in Plastic Surgery
ROBERT W. JOHNSON, III.....	Assistant in Plastic Surgery

This course is designed to acquaint students with the problems of reconstructive and plastic surgery. A subdivision in the dispensary has been established and beds for patients will be available for instruction in this course at the University and Baltimore City Hospitals and Kernan's Hospital for Crippled Children.

Third Year. Five lectures are given to the whole class. Dispensary instruction is provided on Mondays and Fridays.

Fourth Year. Ward rounds and operative demonstrations are held at the hospitals.

SPEECH TRAINING CLINIC

EDWARD A. KITLOWSKI.....	Clinical Professor of Plastic Surgery
RAY EHRENSBERGER.....	Professor of Speech
MERLE ANSBERRY.....	Associate Professor of Speech

This department has been installed in conjunction with the Department of Speech of the University at College Park to evaluate the speech difficulties in children with congenital defects. Admission to the Clinic is by appointment only. The Clinic operates all day Thursdays.

DEPARTMENT OF OBSTETRICS

LOUIS H. DOUGLASS.....	Professor of Obstetrics, and Head of the Department
EMIL NOVAK.....	Associate Professor of Obstetrics
J. MORRIS REESE.....	Associate Professor of Obstetrics
ISADORE A. SIEGEL.....	Assistant Professor of Obstetrics
JOHN E. SAVAGE.....	Assistant Professor of Obstetrics
D. FRANK KALTREIDER.....	Assistant Professor of Obstetrics
MARGARET B. BALLARD.....	Associate in Obstetrics
HUGH B. MCNALLY.....	Associate in Obstetrics
D. MCCLELLAND DIXON.....	Associate in Obstetrics
OSBORNE C. CHRISTENSEN.....	Associate in Obstetrics
J. HUFF MORRISON.....	Instructor in Obstetrics
KENNETH B. BOYD.....	Assistant in Obstetrics
W. KENNETH MANSFIELD, JR.....	Assistant in Obstetrics
GEORGE H. DAVIS.....	Assistant in Obstetrics
CHARLES H. DOELLER, JR.....	Assistant in Obstetrics
J. KING B. E. SEEGAR, JR.....	Assistant in Obstetrics
SCHUYLER G. KOHN.....	Assistant in Obstetrics
LORMAN L. LEVINSON.....	Assistant in Obstetrics
L. CALVIN GAREIS.....	Assistant in Obstetrics
THEODORE KARDASH.....	Assistant in Obstetrics

Third Year. The lectures and recitations consisting of three hours' teaching weekly are designed to cover the anatomy of the female generative tract and the bony pelvis, the physiology and development of the ovum and the physiology of pregnancy and labor. Following this the pathology of pregnancy, labor and the puerperium are taken up. Drs. Douglass, Reese, Siegel, Savage, and Dixon.

Each student spends time during his junior year at the Baltimore City Hospitals observing, assisting and finally delivering patients under strict supervision. Each student sees about twenty deliveries there, and does a considerable amount of the routine work.

The junior students are assigned as assistants to the seniors in the home delivery service and accompany them on deliveries.

Each student receives, in small groups, ten hours of instruction in palpation of patients and mensuration of the pelvis and demonstrations of the mechanism of labor. Drs. Siegel and McNally.

Fourth Year. At the weekly clinical conference, cases are presented and discussed and the student body is encouraged to offer opinions and to ask questions. There is no didactic teaching done, and an earnest effort is made to keep it, in every sense of the word, a conference. Dr. Douglass and associates.

The ward classes are held twice weekly for five weeks for each group. Various subjects are assigned and discussed, patients and their histories are presented. Drs. Reese, Novey, Savage and McNally.

Manikin instruction is given once a week. Drs. Dixon, Kaltreider and Doeller.

During the same five-week period, the students are sent into patients' homes to conduct deliveries under supervision of a senior member of the house staff and with the assistance of a graduate nurse. The student is held responsible for the complete conduct of each assigned case.

Each student spends thirty hours in the prenatal clinic, taking histories and examining patients under supervision.

Finally, the students are invited to attend the monthly meetings of The Committee on Maternal Mortality, where all maternal deaths occurring in Baltimore are openly discussed. *Hours*—Third year—148; Fourth year—102; total—250.

DEPARTMENT OF GYNECOLOGY

J. MASON HUNDLEY, JR.	Professor of Gynecology, and Head of the Department
THOMAS K. GALVIN	Clinical Professor of Gynecology
LEO BRADY	Assistant Professor of Gynecology
EDWARD P. SMITH	Assistant Professor of Gynecology
WILLIAM K. DIEHL	Assistant Professor of Gynecology
EVERETT S. DIGGS	Assistant Professor of Gynecology
BEVERLEY C. COMPTON	Assistant Professor of Gynecology
JOHN C. DUMLER	Assistant Professor of Gynecology
ERNEST I. CORNBROOKS, JR.	Assistant Professor of Gynecology
J. J. ERWIN	Assistant Professor of Gynecology
JOHN T. HIBBITTS	Associate in Gynecology
KENNETH B. BOYD	Associate in Gynecology
GERALD A. GALVIN	Associate in Gynecology
THOMAS S. BOWYER	Instructor in Gynecology
ERNEST S. EDLOW	Instructor in Gynecology
W. ALLEN DECKERT	Instructor in Gynecology

H. L. GRANOFF.....	Instructor in Gynecology
THEODORE KARDASH.....	Instructor in Gynecology
CHARLES B. MAREK.....	Instructor in Gynecology
HELEN I. MAGINNIS.....	Instructor in Gynecology
CHARLES H. DOELLER, JR.....	Instructor in Gynecology
WILLIAM A. DODD.....	Instructor in Gynecology
HARRY MCB. BECK.....	Instructor in Gynecology
WILLIAM C. DUFFY.....	Instructor in Gynecology
JOSEPH C. SHEEHAN.....	Instructor in Gynecology
WILLIAM J. RYSANEK.....	Instructor in Gynecology
HARRY F. KANE.....	Instructor in Gynecology
ROBERT B. TUNNEY.....	Instructor in Gynecology

Third Year. A course of thirty lectures and recitations is given to the whole class. In addition, a short course of lecture-demonstrations is given at the Baltimore City Hospitals, consisting of eight periods of one hour each, in which small groups of students are instructed in the fundamentals of gynecological diagnosis and examination.

Fourth Year. Operative clinics—lectures and demonstrations—are given six hours per week, for five weeks, to sections of the class.

Instruction in female urology is given. A small number of students may attend the cystoscopic dispensary which is held twice weekly.

The course in gynecology also includes instruction in the diagnosis and treatment of cancer of the generative organs. Small groups of students attend the oncological dispensary for additional work.

Third year.....	38 hours
Fourth year.....	74 hours
Total.....	112 hours

DEPARTMENT OF OPHTHALMOLOGY

F. EDWIN KNOWLES, JR.

Assistant Professor of Ophthalmology and Chairman of the Department,

JONAS FRIEDENWALD.....	Lecturer in Ophthalmic Pathology
JOSEPH I. KEMLER.....	Associate in Ophthalmology
PAUL N. FRIEDMAN.....	Instructor in Ophthalmology
A. KREMEN.....	Instructor in Ophthalmology
CLEO D. STILES.....	Instructor in Ophthalmology
RUBY A. SMITH.....	Instructor in Ophthalmology
D. J. MCHENRY.....	Instructor in Ophthalmology
F. E. BRUMBACK.....	Instructor in Ophthalmology
RICHARD J. CROSS.....	Instructor in Ophthalmology
FREDERICK M. REESE.....	Assistant in Ophthalmology

Third Year. Second semester. Dr. Friedman reviews the anatomy and physiology of the eye and discusses the methods used in making the various examinations. Errors of refraction and their effect upon the general system are explained. Weekly section work, demonstrating the use of the ophthalmoscope, is carried on during the entire session at the Baltimore Eye, Ear, and Nose Hospital.

Fourth Year. Clinics and demonstrations are given in diseases of the eye, weekly, for one year. Dr. Knowles.

This course consists of lectures upon the diseases of the eye, with particular reference to their diagnosis and relation to general medicine. Special lectures will be given upon vascular changes in the eye and upon the pathology of the eye. Some operations will be demonstrated by motion pictures.

Weekly ward classes are held at the University and Mercy Hospitals during which the eye grounds in the various medical and surgical conditions are demonstrated. Also daily demonstrations are given in the taking of histories and the diagnosis and treatment of the various conditions as seen in the dispensary. Drs. Knowles, Kemler, Kremen, Smith, McHenry, Brumback, Cross, Jeppi and Pacienza.

Third year.....	20 hours
Fourth year.....	104 hours
Total.....	124 hours

DEPARTMENT OF ROENTGENOLOGY

WALTER L. KILBY.....	Professor of Roentgenology, and Head of the Department
CHARLES N. DAVIDSON.....	Associate Professor of Roentgenology
ASA D. YOUNG.....	Assistant Professor of Roentgenology
STANLEY H. MACHT.....	Assistant Professor of Roentgenology
DONALD J. BARNETT.....	Assistant Professor of Roentgenology
JOHN M. DENNIS.....	Fellow in Roentgenology

During the academic year, small groups of the third and fourth year classes are given weekly instruction in the diagnostic and therapeutic uses of the Roentgen rays. An effort is made to familiarize the student with the indications for and the limitations of the Roentgen ray examinations. The history, physics and practical therapeutic application of Roentgen rays are given stressing the use of radiation as a weapon now available in a variety of disorders of the human body ranging from simple inflammations to malignant neoplastic conditions. Conferences are held with the various departments during the school year which are also open to members of the fourth year class.

Third year.....	8 hours
Fourth year.....	22 hours
Total	30 hours

DEPARTMENT OF ANAESTHESIOLOGY

ALFRED T. NELSON.....	Assistant Professor of Anaesthesiology and Chairman of the Department
JAMES RUSSO.....	Assistant in Anaesthesiology

THIRD YEAR

Lectures are given on the general physiology and pharmacology of anesthesia, with consideration of the special physiology and pharmacology of each anaesthetic agent. The methods of induction and administration of anaesthesia are discussed. The factors influencing the selection of the anaesthetic are emphasized, and the preparation and care of the anaesthetized patient are carefully explained.

These lectures are correlated with practical demonstrations, supplemented by lantern slides and motion pictures, at the University Hospital.

FOURTH YEAR

Each senior student is required to spend twelve hours per week for two weeks observing and administering anaesthetics in the operating room.

Third year.....	10 hours
Fourth year.....	24 hours
	—
Total.....	34 hours

HISTORY OF MEDICINE

LOUIS A. M. KRAUSE..... Professor of Clinical Medicine

Beginning with the spring of 1942 a group of lectures on the history of medicine has been presented on selected phases and trends of the development of medical knowledge and practice. It is planned to avoid duplication of subject matter for at least four years.

These lectures are offered primarily for our students, but a cordial invitation is extended to anyone who may wish to attend.

Announcement of the lectures will be made by mail and on the bulletin board of the School of Medicine.

ART AS APPLIED TO MEDICINE

CARL DAME CLARKE..... Associate Professor of Art as Applied to Medicine

JANE L. BLEAKLEY..... Assistant in Art as Applied to Medicine

RICHARD DOWELL GRILL..... Assistant in Art as Applied to Medicine

CARL CHRISTIAN STEIN..... Assistant in Art as Applied to Medicine

This department is maintained for the purpose of supplying pictorial and plastic illustrations for visual teaching in the classrooms of the medical school and for publication in scientific periodicals.

Special courses of instruction are given to qualified students.

POSTGRADUATE COURSES

COMMITTEE ON POSTGRADUATE STUDIES

HOWARD M. BUBERT, *Chairman and Director*

SARAH COOK, *Assistant Director*

DIETRICH C. SMITH, *1st Vice-chairman*

L. A. M. KRAUSE, *2nd Vice-chairman*

MILTON S. SACKS, *Secretary*

JOHN A. WAGNER

OTTO C. BRANTIGAN

JOHN C. KRANTZ, JR.

EDUARD UHLENHUTH

ALLEN F. VOSHELL

J. MORRIS REESE

WETHERBEE FORT

MRS. ELIZABETH CARROLL, *Executive Secretary*

The Dean—*Ex Officio*

Calendar: Postgraduate courses are offered throughout the year.

The activities of the Postgraduate Committee during the past year, were mainly in the direction of improving its organization and establishing, upon a firm basis, the projects previously instituted.

Again, three extramural courses were given in different sections of the state; one in each of the following counties: Prince George's County at Cheverly; Wicomico County at Salisbury, and Frederick County at Frederick. Enrollment this year was 101, representing an increase of 3 over last year's 98. The Committee is of the opinion that it is impractical, with its present resources, to enlarge this endeavor to embrace the more distant points in the state, but it is considering the possibility of giving such a course in the Baltimore area, should the demand arise.

The Committee is still intensely interested in assisting in securing and training the house staffs of smaller hospitals throughout the state. However, this has proven to be a most complex problem, which has been made even more difficult of solution by the ever growing shortage of candidates for these positions. In view of the increasing demands of the armed services and the veterans administration, it would seem that this problem is going to become more difficult as time goes on, thus rendering a solution ever more necessary.

The following intramural courses have been continued successfully. However, it has been necessary in certain instances to make some upward adjustments of the tuition fees charged:

GENERAL ANATOMY "A": This course is designed to prepare candidates for the examination of the American Board of General Surgery and Surgical Specialties. There is no hard and fast rule about either the content or duration of the course. Students may dissect a complete cadaver or any particular region in which they may be interested. Tuition arranged according to course content and duration.

SURGICAL ANATOMY "B": This course is designed to prepare candidates for the examination in Anatomy of the American Board of Surgery. This is a ninety-hour course (3 hours a day, 2 days a week) given in conjunction with the regular sophomore medical course in surgical anatomy. Tuition \$150.00.

PATHOLOGY "B": This course is designed to prepare candidates for certification in surgery, surgical specialties and internal medicine. Individuals will receive training in autopsy and surgical pathology. Minimum duration is full time, six months. Tuition: \$150 00.

PATHOLOGY "C": (neurological) This course is designed to aid in meeting the requirements of the specialty boards in neurological sciences and covers basic studies in diseases of the central nervous system. Duration is six months, full time. Tuition: \$200.00 plus \$10.00 laboratory fee.

GYNECOLOGY AND OBSTETRICS "A": This is a review for general practitioners. Duration is eighteen hours each of gynecology and obstetrics per week for twelve weeks. Tuition: \$150.00.

GYNECOLOGY, ONCOLOGY AND FEMALE UROLOGY "B": This is a review designed primarily for the general practitioner. Duration is ten weeks, full time. Tuition: \$125.00.

BASIC SCIENCES AS THEY APPLY TO OBSTETRICS AND GYNECOLOGY: This course is a review of the fundamentals of the basic sciences as they apply to Gynecology and Obstetrics and recent advances in these fields. It has been approved by the Postgraduate Survey Committee of the American Board of Obstetrics and Gynecology, and may be presented for six months' credit towards certification by the Board. Duration is 20 weeks full time, beginning early in October. Tuition: \$375.00

The Committee hopes that it will be able to establish a course in the Basic Sciences as they apply to Clinical Medicine, in addition to those above mentioned.

Full descriptions of these courses are available. Inquiries should be addressed to the Post Graduate Committee, University of Maryland School of Medicine, Baltimore 1, Maryland.

FIRST YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 22, 1949 TO JANUARY 28, 1950

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	*Histology and Embryology 11-12 lecture <i>Bressler 2</i>		Orientation (Sept. 28-Oct. 12) 9-10 lecture <i>Adm. 1</i>	*Histology and Embryology 11-12 lecture <i>Bressler 2</i>		Gross Anatomy A. H. 9-11
12.00 to 1.00	Lunch					
1.00 to 5.00	Gross Anatomy Lectures A.H. (1-2) Daily and Laboratories <i>Bressler 1</i> (2-5) Daily					

* Course ends December 20, 1949.

SECOND SEMESTER, JANUARY 30 TO JUNE 10, 1950

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	Laboratory —	Laboratory —	Laboratory —	Laboratory —		
	Biol. Chem. Sect. A	Biol. Chem. Sect. B	Biol. Chem. Sect. A	Biol. Chem. Sect. B		
12.00 to 1.00	Lunch					
1.00 to 2.00	Biol. Chem. <i>Adm. 1</i>	Biol. Chem. <i>Adm. 1</i>	Biol. Chem. <i>Adm. 1</i>	Biol. Chem. <i>Adm. 1</i>	Biol. Chem. <i>Adm. 1</i>	
2.00 to 3.00	Neuro-Physiology <i>Bressler 2</i>	Neuro-Anatomy Lecture (2-3)	Biol. Chem. Conference <i>Adm. 1</i>	Neuro-Anatomy Lecture (2-3)	Biol. Chem. Conference <i>Adm. 1</i>	
3.00 to 5.00	Psychiatry (3-5) <i>C. H.</i>	Laboratory (3-5)		Laboratory (3-5)	Neuro-Physiology <i>Bressler 2</i> (3-4)	

Locations of Lecture Halls and Laboratories:

Adm. 1—First Floor, Administration Building, Lombard and Greene Streets.
 A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
 C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.
 Biological Chemistry Laboratory—Third Floor, 31 South Greene Street.
 Bressler Research Laboratory—29 S. Greene Street.

Gross Anatomy—First Floor.
 Histology and Embryology—Second Floor.
 Neuro-anatomy—Second Floor.

Mid-Year Examinations—January 22-28, 1950

Final Examinations—Begin May 29, 1950

SECOND YEAR SCHEDULE
FIRST SEMESTER, SEPTEMBER 22, 1949 TO JANUARY 28, 1950

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 9.30	Physiology <i>Bressler 2</i>	Physiology <i>Bressler 2</i>	Medicine <i>Bressler 2</i>	Physiology <i>Bressler 2</i>	Physiology <i>Bressler 2</i>	Psychiatry (10-11) <i>Adm. 1</i>
9.30 to 10.30	Physiology Conference <i>Bressler 2</i>	Bacteriology <i>Adm. 1</i>		Pharmacology <i>Bressler 2</i>	Pharmacology <i>Bressler 2</i>	
10.30 to 12.30	†Bacteriology Laboratory				Neurological Diagnosis <i>C. H.</i>	
12.30	Lunch					
1.00 to 5.00	Pharm. Lect. (1-2) <i>Bressler 2</i> Pharmacology <i>B</i> Physiology <i>A</i>	Laboratory <i>A</i> Laboratory <i>B</i>		Pharmacology <i>B</i> Physiology <i>A</i>	Laboratory (1 to 4) <i>A</i> Laboratory <i>B</i>	

† Bacteriology Laboratory—Section work during the last month.

SECOND SEMESTER, JANUARY 30 TO JUNE 10, 1950

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Surgery <i>Bressler 2</i>	Surgery <i>Bressler 2</i>	Surgical Anatomy <i>Bressler 2</i>	Medical Clinic <i>Amp.</i>	Physical Diagnosis <i>Adm. 1</i>	
9.30 to 10.30	Pharmacology <i>Bressler 2</i>	Pharmacology <i>Bressler 2</i>	Surgical Anatomy Laboratory		Pharmacology <i>Bressler 2</i>	Obstetrics <i>Bressler 2</i>
10.30 to 11.30	Pathology <i>C. H.</i>	Pathology <i>C. H.</i>	<i>Bressler 1</i>	Pathology <i>C. H.</i>	Pathology <i>C. H.</i>	
11.30	Lunch					
12.00 to 2.00	Pathology Laboratory	Pathology Laboratory	Immunology	Pathology Laboratory	Pathology Laboratory	
2.00 to 3.00	Surgical Anatomy <i>Adm. 1</i>	|| Immunology	Laboratory	Pharmacology Laboratory <i>Sect. A</i>	Pharmacology Laboratory <i>Sect. B</i>	
3.00 to 5.00	Surgical Anatomy Laboratory <i>Bressler 1</i>	Laboratory	Optional period Pathology Immunology	Physical Diagnosis <i>Sect. B</i> (3.00-5.00) <i>U. H. D</i>	Physical Diagnosis <i>Sect. A</i> (3.00-5.00) <i>U. H. D.</i>	

|| Immunology Laboratory—Section work during last two months.

Locations of Lecture Halls and Laboratories:

Adm. 1—First floor, Administration Building, Lombard and Greene Streets.

C. H.—Chemical Hall, Lower Hall, Lombard and Greene Streets.

Amp.—Wilson Memorial Amphitheatre, New University Hospital, Greene and Redwood Streets, Eighth Floor

U. H. D.—University Hospital Dispensary, Old Hospital Building.

Laboratories:

Physiology, Pharmacology, Surgical Anatomy—Bressler Building.

Bacteriology, Immunology, Pathology, Second Floor, 31 S. Greene Street.

Mid-Year Examinations—January 22-28, 1950

Final Examinations—Begin May 29, 1950

THIRD YEAR SCHEDULE

SEPTEMBER 22, 1949 TO JUNE 10, 1950

SCHEDULE 1

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.20	(Whole Class) Obstetrics C. H. †Gynecology Mar. 27 to May 15	(Whole Class) Surgery C. H.	(Whole Class) Obstetrics C. H. †Gynecology Mar. 29 to May 17	(Whole Class) Surgery C. H.	(Whole Class) Pathology C. H.	(Whole Class) Surgery C. H. †Anaesthesiology Mar. 18 to May 20 Amp.
9.30 to 10.00	Transfer to Baltimore City Hospitals					
10.00 to 12.00	Physical Diagnosis, Pathology, and Neurology at B. C. H.					
12.00 to 1.00	Transfer and Lunch	Transfer and Lunch	Lunch	Transfer and Lunch	Lunch	
1.00 to 2.00	(Whole Class) Nose & Throat, Urology, Otology, Proctology, Plastic Surgery C. H.	(Whole Class) *Gynecology †Eye—10 wks. Jan. 31 to Apr. 11 †Oncology —5 wks. Apr. 18 to May 23 C. H.	Medical Clinic B. C. H.	(Whole Class) Clinical Pathology Bressler 2	Obstetrical Clinic B. C. H.	
2.00 to 4.00	(Whole Class) Pathology Laboratory 31		Surgery	(Whole Class) Clinical Pathology —	Surgery	
4.00 to 5.00	(Whole Class) *Physical Diagnosis, C. H. †Legal Medicine †Psychiatry, A. H.	(Whole Class) Hygiene and Public Health C. H.	Orthopaedics Roentgenology B. C. H.	Laboratory Bressler 5	Orthopaedics B. C. H.	

* First Semester.

† Second Semester.

SCHEDULE 2

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
8.30 to 9.20	(Whole Class) Obstetrics C. H. †Gynecology Mar. 27 to May 15	(Whole Class) Surgery C. H.	(Whole Class) Obstetrics C. H. †Gynecology Mar. 29 to May 17	(Whole Class) Surgery C. H.	(Whole Class) Pathology C. H.	(Whole Class) Surgery C. H. Anaesthesiology Mar. 18 to May 20 Amp.	
9.30 to 10.20	Pediatrics C. H.	*Medicine C. H.	*Medicine C. H.	*Therapeutics C. H.	*Medicine C. H.	Neurology C. H.	
10.30 to 12.30	Operative Surgery— <i>Bressler 6</i> Medical and Surgical Dispensaries—(Univ. and Mercy Sections)						
12.30 to 1.00	Lunch						
1.00 to 2.00	Same as Schedule 1	Medical Clinic <i>Amp.</i>	Medical Clinic <i>Amp.</i>	Same as Schedule 1	Psychiatry Dermatology U. H. Disp.		
2.00 to 4.00			Ophthalmoscopy (5 weeks) B. E. H. — Obstetrics (5 weeks) Univ. Hosp. Disp. — Otology (5 wks.) Univ. Hosp. 3-C				
4.00 to 5.00							Obstetrics <i>Br. 2</i>

* Pediatrics, January 17 to 20 and May 16 to 19, 1950.

The Junior Class will be divided into two sections—A and B. Each section reports to classes in keeping with the following schedule assignment, in which the letters represent the class sections and the numerals indicate the schedules to be followed for the periods shown.

Schedule Assignment

Periods	Sections and Schedules
September 22, 1949 to January 21, 1950.....	A-1, B-2
January 30 to May 20, 1950.....	B-1, A-2

Locations of Lecture Halls, etc.

- A. H.—Anatomical Hall, Upper Hall, N. E. Cor. Lombard and Greene Streets.
- Amp.—Wilson Memorial Amphitheatre, New University Hospital, Eighth Floor
- B. C. H.—Baltimore City Hosps., 4940 Eastern Ave.
- B. E. H.—Baltimore Eye, Ear and Throat Hospital, 1214 Eutaw Place.
- Bressler—Bressler Building, 29 S. Greene Street.
- C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.
- Univ. Hosp.—New University Hospital, Greene and Redwood Streets.
- U. H. Disp.—Old Hospital Building, S. W. Cor. Lombard and Greene Streets.
31—31 South Greene Street.
- Clinical Pathology Laboratory—Fifth Floor, Bressler Building
- Pathology Laboratory—31 South Greene Street, Special Rooms, Basement

Mid-Year Examinations—January 22-28, 1950

Final Examinations—Begin May 22, 1950

FOURTH YEAR SCHEDULE

SEPTEMBER 22, 1949 TO MAY 27, 1950

CLASS DIVISIONS*

Division 1†	Division 2	Division 3‡	Division 4
Medicine and Medical Specialties (8 weeks)	Pediatrics (4 weeks)	Surgery and Surgical Specialties (8 weeks)	Obstetrics (2 weeks)
—	—	—	—
Neurology	Psychiatry (4 weeks)	Urology	Gynecology
Cardiology		Neuro Surgery	Oncology (2 weeks)
Gastro-Enterology		Otology, Rhinology and Laryngology	—
Metabolism		Orthopaedics	Dermatology & Syphilology
Allergy		—	Ophthalmology
—		Roentgenology	Anesthesiology (4 weeks)
Roentgenology			

STUDENT GROUP ASSIGNMENTS

1st Quarter	3rd Quarter
Sept. 22, 1949 to Nov. 19, 1949 (8 weeks)	Jan. 30, 1950 to March 25, 1950 (8 weeks)
Groups 1, 2, 3, 4 to Division 1† Groups 5, 6, 7, 8 to Division 2 Groups 9, 10, 11, 12 to Division 3‡ Groups 13, 14, 15, 16 to Division 4	Groups 1, 2, 3, 4 to Division 3‡ Groups 5, 6, 7, 8 to Division 4 Groups 9, 10, 11, 12 to Division 1† Groups 13, 14, 15, 16, to Division 2
2nd Quarter	4th Quarter
Nov. 21, 1949 to Jan. 28, 1950 (8 weeks)	March 27, 1950 to May 27, 1950 (8 weeks)
Groups 1, 2, 3, 4 to Division 2 Groups 5, 6, 7, 8 to Division 3‡ Groups 9, 10, 11, 12 to Division 4 Groups 13, 14, 15, 16 to Division 1†	Groups 1, 2, 3, 4 to Division 4 Groups 5, 6, 7, 8 to Division 1† Groups 9, 10, 11, 12 to Division 2 Groups 13, 14, 15, 16 to Division 3‡

*The curriculum is arranged in 4 divisions, and the senior class in 16 groups.

†The curriculum of Divisions 1 and 3 is given at the University and Mercy Hospitals simultaneously. There are 4 groups (20 students) assigned to each division. Two groups or one half the students of each division are assigned work for 4 weeks at each hospital. For simplicity students belonging to the 2 groups having the lowest numbers in these division assignments report to the University Hospital, for the 1st 4 weeks. The 2 groups with the highest numbers report to Mercy. At the end of 4 weeks the students at the University Hospital report to Mercy and the groups at Mercy report to the University Hospital for a similar period, thus completing one division of work.

ASSISTANT PROFESSORS

- *ADELE B. BALLMAN.....*Assistant Professor of English*
Goucher College, A.B. (1926) ; Johns Hopkins University, Ph.D. (1935).
- *GLENN S. WEILAND¹.....*Assistant Professor of Chemistry*
University of Maryland, B.S. (1928) ; M.S. (1930) ; Ph.D. (1933).

INSTRUCTORS

- BENJAMIN FRANK ALLEN.....*Instructor in Pharmacy*
University of Maryland, B.S. (1937).
- *JOHN H. APPLGARTH.....*Instructor in Zoology*
San Jose State College, A.B. (1935) ; Stanford University, M.A. (1938).
- GEORGIANA S. GITTINGER.....*Instructor in Physiological Chemistry*
Hood College, A.B. (1912) ; University of Virginia, M.A. (1924).
- MARGARET WONG LEW².....*Instructor in Pharmacy*
University of Maryland, B.S. (1944).
- AUGUSTA SOLODAR NEISTADT.....*Instructor in Pharmacy*
New Jersey College of Pharmacy, Ph.G. (1913).
- HARRIET R. NOEL.....*Instructor in Pharmacy*
University of Maryland, Ph.G. (1934) ; B.S. (1935).
- *CLAIRE STRUBE SCHRADIECK.....*Instructor in Languages*
Goucher College, A.B. (1916) ; Johns Hopkins University, Ph.D. (1919).
- KENNETH H. STAHL.....*Instructor in Chemistry*
Carthage College, B.A. (1938) ; University of Iowa, B.S. (1941) ; M.S. (1941).

ASSISTANTS

- MARTHA LOVELL ADAMS.....*Assistant in Chemistry*
College of William and Mary, B.S. (1946).
- FRANCIS S. BALASSONE.....*Assistant in Pharmacy*
University of Maryland, B.S. (1940).
- *JAMES F. BATTEY.....*Assistant in Physics*
Brown University, Sc.B. in Physics (1943).
- JOSEPH PAUL BOGGIO.....*Assistant in Pharmacology*
Loyola College, B.S. (1943).
- GORDON H. BRYAN.....*Assistant in Pharmacology*
Montana State University, B.S. (1940) ; M.S. (1947).
- ROBERT I. ELLIN.....*Assistant in Chemistry*
Johns Hopkins University, B.A. (1946).
- JEN-YAH HSIE.....*Assistant in Bacteriology*
Army Veterinary College, B.S. (1938) ; Michigan State College, M.S. (1947).
- JOHN G. MAGIROS.....*Assistant in Chemistry*
University of Maryland, B.S. (1948).
- JACOB SHOLOM MEYERS.....*Assistant in Pharmacy*
University of Maryland, B.S. (1948).
- PAUL ALLEN PUMPIAN.....*Assistant in Botany and Pharmacognosy*
University of Maryland, B.S. (1948).
- *BERNHARDT H. REINCKE³.....*Assistant in Zoology*
University of Maryland, B.S. (1948).
- WILLIAM CHARLES ROSSBERG.....*Assistant in Pharmacy*
University of Maryland, B.S. (1946).
- SHIRLEY SHULMAN.....*Assistant in Economics*
University of Maryland, B.S. (1948).

* Teachers detailed from the College of Arts and Sciences to the Baltimore Branch of the University.

¹ Resigned February 1, 1949.

² Appointed November 1, 1948.

³ Resigned December 3, 1948.

ASSISTING STAFF

IDA MARIAN ROBINSON, A.B., B.S.L.S.....	<i>Librarian</i>
HILDA E. MOORE, A.B., A.B.L.S.....	<i>Assistant Librarian</i>
REBECCA S. ELAM, A.B., B.S.L.S.....	<i>Cataloguer</i>
ELIZABETH CROUSE.....	<i>Library Assistant</i>
MARGARET E. BEATTY.....	<i>Senior Stenographer</i>
DAISY LOTZ GUE.....	<i>Senior Stenographer</i>

SCHOOL OF PHARMACY

HISTORY

The School of Pharmacy of the University of Maryland, formerly the Maryland College of Pharmacy, was organized on July 20, 1840, by a forward-looking group of apothecaries and physicians then practicing in the State of Maryland, who recognized the necessity for more thoroughly educated and better-trained pharmacists if this rapidly growing phase of medical service was to be properly developed. It was incorporated on January 27, 1841, and the first course of lectures was begun in November of the same year. The College continued to operate as an independent institution until 1904, when it was amalgamated with the group of professional schools in Baltimore then known as the University of Maryland. It became a department of the State University when the old University of Maryland was merged with the Maryland State College in 1920. With but one short intermission just prior to 1856, it has continuously exercised its functions as a teaching institution.

AIMS AND PURPOSES

The School of Pharmacy provides systematic instruction in pharmacy, the collateral sciences, and such other subjects as are deemed to be essential in the education of a pharmacist. Its chief aim is to prepare its matriculants for the intelligent practice of dispensing pharmacy, but it also offers the facilities and instruction necessary for the attainment of proficiency in the practice of the other branches of the profession and in pharmaceutical research.

BUILDINGS AND EQUIPMENT

The School occupies the building erected for it by the State at the northwest corner of Lombard and Greene Streets, in Baltimore. This is a commodious six-story laboratory and classroom building especially designed to house the work of pharmacy. It is completely equipped throughout, and offers every facility for the undergraduate student to carry on the work necessary to acquire a thorough knowledge of pharmacy, and to the graduate student for the pursuit of research in the various fields of pharmacy, and the collateral sciences.

Four lecture rooms seating 116 to 145 students, and four recitation rooms with a seating capacity of 35 to 40 students are available in this building. These are equipped with modern tables for lecture demonstrations in the sciences, with lanterns and screens and the other devices commonly used in lecture and recitation work.

The building provides laboratory space for drug milling and the various courses in pharmacy; for the several courses in chemistry; for instruction in botany and pharmacognosy; for work in the biological sciences, zoology, bacteriology, physiology, and pharmacology; for the pursuit of research in any of these departments.

The building also provides library facilities. It contains a well-lighted reading-room with accommodations for 100 students, and a stack-room space to accommodate 12,000 volumes. At the present time the library contains more than 11,000 books and periodicals pertaining to pharmacy and the collateral sciences. Additional library facilities are available at the Medical School Library, which is only a few doors away, the Enoch Pratt Free Library, the Peabody Library, and the libraries of the various departments of the Johns Hopkins University.

RECOGNITION

The school is accredited by the American Council of Pharmaceutical Education, and holds membership in the American Association of Colleges of Pharmacy. It is registered with the New York Department of Education, and its diploma is recognized by all the states.

COURSES AND DEGREES

A four-year course leading to the degree of Bachelor of Science in Pharmacy (B.S. in Pharm.) is offered. The first three years of the curriculum are the same for all students taking this course, but the work of the fourth year may be varied within the limits set forth on page 22.

Advanced courses are offered in pharmacy, pharmaceutical chemistry, pharmacology and pharmacognosy. The degree of Master of Science (M.S.) is conferred upon graduates of the four-year course who have completed at least one year of graduate work and have presented a satisfactory thesis. Candidates for this degree may take all of the work in the School of Pharmacy. Candidates for the degree of Doctor of Philosophy (Ph.D.) may also take the major portion of the required work in the School of Pharmacy. All candidates for these degrees, however, must register in the Graduate School of the University and meet the requirements of that School. For detailed information concerning registration requirements for admission, etc., see the catalogue of the Graduate School.

REQUIREMENTS FOR ADMISSION *

The requirements for admission meet fully those prescribed by the American Council on Pharmaceutical Education, and the American Association of Colleges of Pharmacy.

ADMISSION TO FRESHMAN CLASS FROM SECONDARY SCHOOLS

An applicant from a secondary school may be admitted either by certificate, or by examination, or by a combination of the two methods.

ADMISSION BY CERTIFICATE: An applicant must be a graduate of a secondary school which is approved by the State Board of Education of Maryland or by an accredited agency of at least equal rank, and which requires for graduation not less than 16 units, grouped as follows:

Distribution of Units between Required and Elective Subjects: Required subjects 8 units, elective 8 units, total 16 units.

Required Subjects: English (I, II, III, IV), 4 units; algebra to quadratics, 1 unit; plane geometry, 1 unit; history, 1 unit; science, 1 unit. Total, 8 units.

Elective Subjects: Astronomy, biology, botany, chemistry, civics, economics, general science, geology, history, vocational subjects (agriculture, commercial drawing, home economics, shops, etc.), foreign languages, mathematics, physical geography, physics, zoology, or any subject offered in a standard high or preparatory school for which graduation credit is granted toward college or university entrance. Total, 8 units, of which not more than four shall be vocational units.

A unit represents a year's study in any subject in a secondary school, and constitutes approximately one-fourth of a full year's work. It presupposes a school year of 36 to 40 weeks, recitation periods of from 40

* The right is reserved to refuse admission to applicants with sufficient scholastic credit, whose presence in the School would in the judgment of the Faculty Council be detrimental to the best interests of the School.

to 60 minutes, and for each study four or five class exercises a week. Double laboratory periods in any science or vocational study are considered as equivalent to one class exercise. Normally, not more than three units are allowed for four years of English. If, however, a fifth course has been taken, an extra unit will be granted.

A graduate of an approved secondary school in Maryland who meets the certification requirements of the State Department of Education, or the Department of Education of Baltimore City, will be admitted upon presentation of the proper certificate from the principal. A graduate who does not fully meet these requirements may be required to present further evidence of ability to undertake college work. At the discretion of the Director of Admissions, this may include an appropriate examination. Such examination will be given during the first week of each of the months of June, July, August and September at College Park, Md. Applicants concerned will be notified when and where to report.

An applicant for admission by certificate from a secondary school not located in Maryland must be recommended by the principal, and should have attained the certification-to-college grade of the school. If the school does not have such quality grade, then the applicant's school grades must be at least ten points or one letter higher than the lowest passing grade of the school.

ADMISSION BY EXAMINATION: An applicant from a secondary school who is not eligible for admission by certificate may seek entrance through either of two types of examination: (1) he may appeal to the Director of Admissions for permission to report at the University for an examination, the result of which will be used in conjunction with the secondary school record to determine whether the applicant should be admitted, or (2) he may be admitted on presenting evidence of having passed satisfactorily other approved examinations in the subjects required for graduation from an accredited secondary school. Such examinations are offered by the College Entrance Examination Board, 431 West 117th Street, New York City, the Regents of the University of the State of New York, Albany, and the Department of Public Instruction of the State of Pennsylvania, Harrisburg.

Applications for admission must be approved, not only by the Director of Admissions, but also by the Committee on Admissions of the Faculty Council of the School of Pharmacy.

ADMISSION WITH ADVANCED STANDING

An applicant for admission with advanced standing must present official transcript of his high school and college records and a certificate of honorable dismissal from the college from which he is transferring. If the transcript of his college record shows the average of the grades received to be at least a "C" or one letter higher than the minimum passing grade, and if he has satisfied all other admission requirements, he may be admitted and given advanced standing as follows:

A student transferring from a college of pharmacy accredited by the American Council on Pharmaceutical Education may be admitted to advanced standing without examination and be given credit for that portion of the work of the first three years of the pharmacy curriculum which he may have completed.

A student transferring from a recognized non-pharmacy college may be admitted to advanced standing without examination and be given credit for the work completed in the general cultural or foundational subjects of the pharmacy curriculum.

No more than one year of credit in time will be given to any student applying for advanced standing from any institution other than a college of pharmacy, unless such credit shall be for graduate work in applied subjects done in a recognized graduate school or other educational institution.

In order that the training of the applicant for advanced standing may be equal to that of the members of the class which he seeks to enter, he will be required to take those courses, which the class has completed but which he has not completed and such courses will be given precedence over the more advanced courses in preparing his schedule of studies.

An applicant for advanced standing will not be given more favorable classification than he would have received in the college from which he transfers.

SPECIAL STUDENTS

An applicant who cannot furnish sufficient entrance credit and who does not desire to make up units in which he is deficient may enter as a special student and pursue all the branches of the curriculum, but will not be eligible for graduation and will not receive a diploma. The Faculty Council reserves the right to decide whether or not the preliminary training of the applicant is sufficient to permit admission under these conditions.

APPLICATION FOR ADMISSION

An application blank for admission may be had by applying to the office of the Director of Admissions of the University of Maryland or the Dean of Pharmacy. The form must be filled out in full with the names of all schools attended, signed by the applicant and returned to the office of the Director of Admissions with the required photographs and the five dollar investigation fee. Do not send diplomas or certificates. The Director of Admissions will secure all necessary credentials after the application has been received. Do not make application unless reasonably certain that preparation is sufficient or unless intending to complete preparation if insufficient. Ample time should be allowed for securing credentials and investigating schools. If the applicant qualifies for the study of the profession, a certificate of entrance will be issued.

REGISTRATION WITH THE MARYLAND BOARD OF PHARMACY

The Maryland Pharmacy Law, as amended in 1931, requires all students entering upon the study of Pharmacy in the State to file application with the Maryland Board of Pharmacy. The law reads as follows:

"Any person enrolling as a student in pharmacy in any school or college of pharmacy in this state shall, not later than thirty days after enrolling, file with the Secretary of the Maryland Board of Pharmacy, an application for registration as a student of pharmacy in which said application he shall be required to furnish such information as the Board may deem appropriate, and simultaneously with the filing of said application, shall pay the Board a fee of one dollar; all such students of pharmacy shall, at the beginning of any subsequent school or college year, submit to the said Board a sworn statement of any and all actual drugstore experience acquired during the preceding vacation months."

MATRICULATION AND REGISTRATION

All students are required to report in person for enrollment at the office of the Secretary of the School of Pharmacy during the registration period at the beginning of each semester. A student entering for the first time must matriculate before he will be permitted to register.

All students must complete their registration at the office of the Registrar on the days scheduled in the calendar. Under no condition will a

student be permitted to enter classes before he has completed registration. Students who fail to register on the days scheduled are required to pay a late registration fee of five dollars (\$5.00). The last day for registration with the payment of the late registration fee is Saturday at noon following the last day scheduled for registration in the calendar. This rule may be waived only upon the written recommendation of the Dean.

FEEES AND EXPENSES

Application fee (With application).....	\$ 5.00
Matriculation fee (First-year only).....	10.00
Tuition fee (per semester):	
Residents of Maryland.....	115.00
Non-Residents	140.00
Laboratory fee (per semester).....	35.00
Graduation fee (Senior year).....	15.00
Special fees:	
Penalty for late registration or non-payment in full of fees when due	5.00
Examination for removal of a condition.....	1.00
Special examination	2.00

A student who is not following the regular schedule, but is taking courses equivalent to three-fourths or more of a semester's work, will be charged the full fees. A student taking less than three-fourths of a semester's work, will be charged on a subject basis at the rate of \$9.00 per semester hour plus an additional \$1.00 per semester hour for courses requiring laboratory work. A student given the privilege of taking more than the regularly scheduled work for a semester will be charged an additional fee for each extra course.

In addition to the regular fees, there are other expenses. Each student is required to pay \$6.00 each semester (Freshman students \$5.00) to the "Students' Activity Fund" which is used to defray the cost of extra-curricular activities. The expenditure of approximately \$90.00 per academic year is necessary for the purchase of books, weights, dissecting instruments, and incidentals.

FEEES FOR GRADUATE STUDENTS

Matriculation fee of \$10.00.

General fee of \$10.00 per semester hour required of all graduate students except assistants, who will pay a fee of \$5.00 per semester hour in laboratory courses only.

Non-resident fee—\$12.50 per semester hour.

Diploma fee—Master's degree—\$15.00.

Doctor's degree—\$25.00.

PAYMENTS AND EXPLANATION OF FEEES

A fee of \$5.00 is charged to cover the cost of examining applicant's record. This fee should be sent in with the completed application blank.

The Matriculation fee of \$10.00 is charged but once. It must be paid at the time the applicant is accepted for admission. Registration of a student in any school or college of the University is regarded as registration in the University of Maryland, but when such student transfers to a professional school of the University or from one professional school to another, he is required to pay the matriculation fee charged by the school to which he transfers.

A tuition fee of \$115.00 per semester is charged a student who is a resident of Maryland (See definition of resident student). A student who is not a resident of Maryland is charged an additional \$25.00 per semester. The tuition fee must be paid during the registration period at the beginning of each semester.

A laboratory fee of \$35.00 per semester is charged to cover materials and apparatus used in laboratory work. This fee must be paid during the registration period at the beginning of each semester.

A graduation fee of \$15.00 is charged. This fee must be paid not later than the registration period for the last semester of the senior year.

Special fees are charged as indicated in the preceding table. The penalty fee for late registration or non-payment of fees in full must be paid before the end of the semester in which these fees are due. The fee for an examination to remove a condition or for a special examination must be paid before the student takes the examination and the receipt for payment must be presented to the teacher giving the examination.

The foregoing requirements with regard to the payment of fees will be rigidly adhered to. Failure to meet any of the above conditions will automatically disbar a student from attendance upon classes and all other privileges of the School.

DEFINITION OF RESIDENT STUDENT

A student who is a minor is considered to be a resident student if, at the time of his registration, his parents have been residents of this State for at least one year.

An adult student is considered to be a resident if, at the time of his registration, he has been a resident of this State for at least one year; provided such residence has not been acquired while attending any school or college in Maryland.

The status of the residence of a student is determined at the time of his first registration in the University and may not thereafter be changed by him unless, in the case of a minor, his parents move to and become legal residents of this State by maintaining such residence for at least one full calendar year. However, the right of the student (minor) to change from a non-resident to a resident status must be established by him prior to registration for a semester in any academic year.

WITHDRAWAL AND RETURN OF FEES

If a student desires or is compelled to withdraw from the School at any time during the academic year, he should file a formal application for withdrawal, bearing the proper signatures as indicated on the form, with the Dean. A copy of this withdrawal application form may be obtained from the office of the Secretary of the School.

In the case of a minor, withdrawal will be permitted only with the written consent of the student's parents or guardian.

A student who fails to withdraw in the required manner will not be entitled to an honorable dismissal and will forfeit his right to any refund to which he might otherwise be entitled.

Students withdrawing from the School within five days after the beginning of instruction for the semester are granted a full refund of all charges except the matriculation fee and a charge of \$5.00 to cover cost of registration.

Students withdrawing from the School after five days and before the end of three weeks from the beginning of instruction in any semester will receive a pro-rata refund of all charges, less a deduction of \$10.00 to cover cost of registration. After the expiration of the three-week

period referred to, refunds will be made only in those cases in which the circumstances are exceptional and the president of the University has authorized the making of such refunds.

TRANSCRIPTS OF RECORDS

Any student or alumnus may secure a transcript of his scholastic record from the Registrar. No charge is made for the first copy so furnished, but for each additional copy there is a charge of \$1.00.

Transcript records are of two kinds:

- (a) Informal transcripts which may be obtained by the student or alumnus for such personal use as he may wish; and
- (b) Official transcripts, bearing the University seal, which are forwarded, on request, to educational institutions, Government agencies, etc. as attested evidence of the student's record at the School of Pharmacy and his honorable dismissal therefrom.

No transcript of a student's record will be furnished in the case of any student or alumnus whose financial obligations to the School of Pharmacy have not been satisfied.

ATTENDANCE REQUIREMENTS

A student must have entered and be in attendance on the day the regular session opens and remain until the close of the session, the dates for which are given in the calendar in this catalogue, to receive credit for a full session.

A student may register and enter not later than five days after the beginning of the session, but such delinquency will be charged as absence from class. In case of serious personal illness, as attested by a physician, a student may register not later than the fifteenth day following the announced opening of the regular session.

Regular attendance is demanded of all students. No student will be admitted to the final examination in any subject in which he or she has not attended at least 85 per cent. of the classes therein. Further absence will not be excused.

A tardiness of one-half or more of a lecture or laboratory period will be counted as an absence. Two tardinesses of less than one-half of a lecture or laboratory period will be counted as an absence.

EXAMINATIONS

Written and oral examinations are given at different intervals throughout the session. Final examinations are held at the close of each semester. The final grade of a student in each subject is determined by these examinations.

Examinations for the completion of the courses in which a student received a grade of "Incomplete" and for the removal of conditions will be held only on the dates scheduled in this catalogue or on the dates announced by the Dean. A student who is conditioned in the first semester must remove the condition during the college year, but will not be permitted to take an examination within thirty days from the date on which the conditional rating was received. A condition received in the second semester must be removed on the dates scheduled during the week preceding the opening of the subsequent college year. (See page 3 of the catalogue.)

A student failing to present himself for examination in any course must report to the Dean as soon as practical. If the Dean is satisfied that the absence was justifiable, he will give permission for a deferred examination.

SCALE OF GRADING

The scholastic standing of a student is recorded in terms of the following symbols:

A, Excellent (93-100); B, Good (87-92); C, Fair (80-86); D, Passed (75-79); E, Conditioned (60-74); F, Failed (below 60); I, Incomplete.

The following values in "points" are assigned to the following grades:

- 4 points for each hour of grade A
- 3 points for each hour of grade B
- 2 points for each hour of grade C
- 1 point for each hour of grade D

Grade E, Conditioned, indicates a record below passing, but which may be raised to a higher grade, without repeating the course, by a subsequent examination on the subject-matter.

Grade F, Failed, obtained at the close of a course indicates insufficient attendance to take the final examination, discontinuance of the course without the consent of the Dean, or a record so poor that a student is required to repeat the work in class.

Grade I, Incomplete, is given only to a student who has a proper excuse for not presenting himself for examination or for not completing the work of any course. It is not understood to signify work of an inferior quality. It will be replaced by a definite grade when all requirements for the course have been met.

SCHOLARSHIP REQUIREMENTS

A student, to be advanced to full standing in the class of the next succeeding year, must have satisfactorily completed all of the scheduled work of the preceding year, but, for the purpose of classification, he will be considered to have attained this rank if he received passing grades in not less than four-fifths of the scheduled work, except as hereinafter stated for promotion from the third to the fourth year.

A student, to be promoted to the fourth year, must have completed all of the scheduled work of the preceding year with a grade point count of 70 for the work of the third year. A grade point count of 70 is also required for the fourth year.

A student, who fails to obtain passing grades in less than four-fifths of the scheduled work, will be placed on probation. A student, who fails to obtain passing grades in less than one-half of the scheduled work, will be required to withdraw.

A student on probation, who fails to obtain passing grades in all of the work for which he is scheduled with a grade count of not less than five points in excess of the number of credit hours represented, will be required to withdraw.

DEPARTMENT

The profession of pharmacy demands, and the School of Pharmacy requires, evidence of good moral character of its students. The conduct of a student in relation to his work and fellow students will be used by the faculty in determining the fitness of a student to enter into the confidence of the community as a professional man. Integrity, truthfulness, sobriety, temperate habits, respect for authority and associates, and honesty in the transaction of business affairs as a student will be considered as evidence of good moral character necessary to the granting of a degree.

Any offense against good conduct, in the ordinary meaning of the term, will render a student liable to disciplinary action, whether or not a formal rule against the offense has been published.

REQUIREMENTS FOR GRADUATION

The degree of Bachelor of Science in Pharmacy (B.S. in Pharm.) will be conferred upon a candidate who has met the following requirements:

1. Completion of the full prescribed curriculum (see page 22). The work of the last year must have been in courses offered in this school and must have been done in residence at this school.
2. A total semester credit of not less than 140, with a grade point count for each of the last two academic years of not less than twice the total semester hours of credit scheduled for the respective years.

PRACTICAL EXPERIENCE REQUIREMENTS OF THE MARYLAND PHARMACY LAW

The Pharmacy Law of Maryland requires four years of practical experience for registration as a pharmacist. The time spent in a recognized school or college of pharmacy is credited toward the practical experience required to the extent of not more than three years.

In view of this requirement, prospective students are advised to secure employment, if possible, before entering the School.

EMPLOYMENT

A student should come prepared, if possible, to sustain himself financially during the entire period of attendance, as all of the time available may be profitably spent in the completion of the scheduled work and in the preparation of studies. Those who cannot meet this condition in full need not be dismayed, however, as Baltimore offers a number of opportunities to secure suitable employment. A register of positions available in drug stores is kept in the office of the Secretary of the School where it may be consulted upon request.

FELLOWSHIPS, SCHOLARSHIPS, AND LOAN FUNDS

THE H. A. B. DUNNING RESEARCH FELLOWSHIP

Dr. H. A. B. Dunning, the well-known retail and manufacturing pharmacist of Baltimore, who was for a number of years associate professor of chemistry in the School, and whose interest in his Alma Mater is still active, has contributed \$1,000.00 annually since 1930 to maintain a research fellowship in pharmaceutical chemistry. This fellowship is awarded annually to a student in pharmacy who has completed four years of college work, and who gives evidence of a special aptitude for investigational work in pharmaceutical chemistry.

AMERICAN FOUNDATION FOR PHARMACEUTICAL EDUCATION FELLOWSHIPS

The American Foundation for Pharmaceutical Education provides several research fellowships for graduate students in pharmacy who have been admitted to the Graduate School. The stipend varies from \$900 to \$1500, with an allowance for tuition, fees and supplies.

THE STERLING-WINTHROP RESEARCH INSTITUTE FELLOWSHIP

The Sterling-Winthrop Institute for Research has provided a grant of \$400 for the purpose of supporting investigations in synthetic organic chemistry. This fellowship will be awarded by the faculty to a graduate student who possesses the qualifications required by the research studies to be undertaken.

CENTENNIAL RESEARCH FUND FELLOWSHIPS

The amount of \$2,796.50 was collected in connection with the celebration of the 100th Anniversary of the founding of the School of Pharmacy. This sum will be used to provide two fellowships for research studies distributed over the following fields: pharmacy, pharmaceutical chemistry, pharmacology, bacteriology and pharmacognosy. The selection of the recipients of these fellowships will be made by the faculty with the approval of the Dean.

THE HUDNUT SALES CO. FELLOWSHIP

The Hudnut Sales Co., of New York, has contributed funds sufficient to provide a fellowship paying \$1,000.00 annually for two years for research in pharmaceutical chemistry and the allied sciences. This fellowship will be awarded for research in pharmaceutical chemistry, pharmacology or pharmacy.

RESEARCH GRANT OF THE ALUMNI ASSOCIATION OF THE
SCHOOL OF PHARMACY

The Alumni Association of the School of Pharmacy has agreed to deposit each year the sum of \$100.00 with the School of Pharmacy as a research grant, to be placed to the credit of a student selected by the Committee on the Research Grant of the Alumni Association to enable him to engage in pharmaceutical research in the School of Pharmacy during the next scholastic year. The research conducted shall be of general pharmaceutical interest, and shall be submitted for publication in one of the pharmaceutical journals when completed and accepted.

ASSISTANTSHIPS

A number of assistantships have been established by the School. The stipend for these is \$900.00 for the academic year, and the remission of all graduate fees except the laboratory fees and the diploma fee.

Assistants are required to render such service in laboratory and didactic work as are prescribed by the heads of the respective departments in which they are serving. The usual amount of services required does not exceed 14 clock-hours per week, which enables an assistant to carry approximately a full graduate program.

INTERNSHIPS IN HOSPITAL PHARMACY

Several internships in hospital pharmacy are available annually. These are offered jointly by the School of Pharmacy and the Graduate School of the University of Maryland, and the Pharmacy Department of The Johns Hopkins Hospital. Applicants must be graduates of recognized schools of pharmacy. Appointments are for a period of two years, beginning each July 1st. Interns devote half time to graduate study and half time to work in the hospital pharmacy. Upon satisfactory completion of the internship and the course of study, Master of Science degrees are conferred by the University of Maryland and certificates of internship are awarded by The Johns Hopkins Hospital.

A stipend of \$100 per month is provided by the Hospital and a reduction of 25% in tuition fees is allowed by the School of Pharmacy.

Complete information on this program may be secured by addressing inquiries to the Chief Pharmacist, The Johns Hopkins Hospital, Baltimore 5, Maryland.

THE CHARLES LANDON HENRY MEMORIAL SCHOLARSHIP

In memory of her husband, Charles Landon Henry, who was for many years a loyal member of the Maryland Pharmaceutical Association, who was active in pharmaceutical affairs in Maryland and neighboring states, and who was especially interested in the welfare and progress of worthy young people, Mrs. Nora Howard Henry endowed a scholarship to be awarded annually by the faculty to a fourth-year student who has shown superior proficiency in his or her work in practical and commercial pharmacy. The award amounts to approximately \$100.00.

AMERICAN FOUNDATION FOR PHARMACEUTICAL EDUCATION SCHOLARSHIPS

The American Foundation for Pharmaceutical Education will contribute an amount of \$400.00 which will be matched with an equal amount of \$400.00 by the School of Pharmacy. The amount provided by the Foundation is available only to juniors or seniors who rank in the upper quarter of their class. The amount provided by the School is available to any undergraduate student who, as high school or college students, have maintained a rank in the upper quarter of their class.

READ DRUG AND CHEMICAL CO. SCHOLARSHIPS

The Read Drug and Chemical Co., of Baltimore, Maryland, has contributed sufficient funds to provide two scholarships paying \$250.00 annually and has also contributed through the American Foundation for Pharmaceutical Education funds sufficient to provide one scholarship of \$250.00 annually for students who meet the qualifications stated under the American Foundation for Pharmaceutical Education scholarships.

HENRY B. GILPIN CO. SCHOLARSHIPS

The Henry B. Gilpin Co., of Baltimore, Maryland, has contributed sufficient funds through the American Foundation for Pharmaceutical Education to provide for one scholarship of \$100.00 annually for a student who meets the qualifications stated under American Foundation for Pharmaceutical Education scholarships.

THE CHARLES CASPARI, JR., MEMORIAL LOAN FUND

In memory of Prof. Charles Caspari, Jr., a former dean of the School of Pharmacy, and in keeping with the modesty, lack of ostentation, eagerness for service and helpfulness to others, which were striking characteristics of Professor Caspari, a number of friends and alumni have made contributions to establish a fund in his name. Loans are made from this fund to members of the fourth-year class upon the recommendation of the Dean.

L. MANUEL HENDLER LOAN FUND

On March 7, 1932, there was established by Mr. L. Manuel Hendler, of Baltimore, a fund to be loaned to needy students. This fund is available to junior and senior students only, and loans therefrom are made upon the recommendation of the Dean.

HONORS AND AWARDS

SCHOOL AWARDS

GENERAL—A gold medal will be awarded annually to the candidate for the degree of Bachelor of Science in Pharmacy, whose deportment is creditable, and who has attained the highest general average, not below B. Certificates of Honor will be awarded to the three students having the

highest general average, next to the winner of the general prize, provided this does not fall below B.

THIRD YEAR—Honorable Mention will be made of the first three students having the highest general average, provided this does not fall below B.

THE WILLIAM SIMON MEMORIAL PRIZE

In honor of the late Dr. William Simon, for thirty years professor of chemistry in the School of Pharmacy, a gold medal will be awarded by the Faculty to a candidate for the degree of Bachelor of Science in Pharmacy for superior proficiency in the field of practical and analytical chemistry. The recipient must stand high in all subjects. In recommending a student for the prize, the professor of chemistry will be guided in his judgment of the student's ability as much by observation and personal contact as by grades made in examinations.

THE L. S. WILLIAMS PRACTICAL PHARMACY PRIZE

The late L. S. Williams (Class of 1909) placed in trust the sum of approximately \$1,000.00, the income therefrom to be awarded annually by the Faculty of the School of Pharmacy to the senior student having the highest general average throughout the course in practical and dispensing pharmacy.

THE CONRAD L. WICH BOTANY AND PHARMACOGNOSY PRIZE

In appreciation of the assistance which the Maryland College of Pharmacy extended to him as a young man, Mr. Conrad L. Wich (Class of 1882), placed in trust the sum of \$500.00, the income therefrom to be awarded annually by the Faculty of the School of Pharmacy to the senior student who has done exceptional work throughout the course in Botany and Pharmacognosy.

DAVID FINK MEMORIAL PRIZE

Mr. Samuel I. Raichlen, Class of 1925, offers a new United States Dispensatory as a prize in memory of David Fink, Class of 1924, to be awarded annually by the Faculty of the School of Pharmacy to a senior student for proficiency in the general practice of pharmacy.

BETA CHAPTER, PHI ALPHA FRATERNITY CUP

The Beta Chapter of the Phi Alpha Fraternity has provided a cup in memory of Joseph J. Fine, Melvin S. Adalman and Albert Goldberg, who died in the service of their country. This cup is to be awarded annually to the senior student selected by the Faculty as having exhibited outstanding qualities of character and leadership.

KAPPA CHAPTER, ALPHA ZETA OMEGA PRIZE

The Kappa Chapter of the Alpha Zeta Omega Fraternity has provided a prize to be awarded annually to the senior student chosen by the Faculty Council for proficiency in pharmacology.

STUDENT ORGANIZATIONS

STUDENT COUNCIL

The Student Council is an organization of students established for the purpose of supervising in a general way the social and extra-curricular activities of the student body, to assist in maintaining a proper decorum among students when in attendance upon instruction, and to foster and

encourage a class spirit which will reflect honor on the splendid traditions of the School. The council consists of twelve members, three elected by each of the four classes, four ex-officio members who are the presidents of the respective classes, and a faculty advisor.

RHO CHI HONORARY PHARMACEUTICAL SOCIETY

Omicron chapter of the Rho Chi, national honorary pharmaceutical society, was established at the University of Maryland in 1930. Charters for chapters of this organization are granted only to groups in schools or colleges that are members in good standing of the American Association of Colleges of Pharmacy. Eligibility for membership in the Society is based on high attainment in scholarship, character, personality, and leadership. All candidates selected for membership must have completed 75 credit hours of college work, and must be approved by the Dean of the School of Pharmacy.

STUDENTS' AUXILIARY OF THE MARYLAND PHARMACEUTICAL ASSOCIATION

The Students' Auxiliary of the Maryland Pharmaceutical Association was organized in November, 1935.

The object of the Auxiliary is to provide for the participation of students in the activities of the Maryland Pharmaceutical Association to the end that their interest in pharmaceutical association work may be awakened and guided; and to familiarize them with the conditions existing in and the problems confronting their profession.

OFFICERS (1948-49)

President—William Hahn, Fourth-Year Class.
 First Vice-President—John L. Cunzeman, Third-Year Class.
 Second Vice-President—Harry A. Santoni, Second-Year Class.
 Secretary—Miss LaRue Voshell, Second-Year Class.
 Treasurer—Robert F. Wolf, First-Year Class.
 Editor—Paul Edwards, Third-Year Class.

EXECUTIVE COMMITTEE

William Hanks, Fourth-Year Class.
 Richard J. Williamson, Third-Year Class.
 Gordon Crispens, Second-Year Class.
 John Clark, First-Year Class.

ALUMNI ASSOCIATION

ALUMNI ASSOCIATION OF THE SCHOOL OF PHARMACY OF THE UNIVERSITY OF MARYLAND

A meeting of the graduates of the School of Pharmacy of the University of Maryland, then the Maryland College of Pharmacy, was held on May 15, 1871. At this meeting there was organized the Society of the Alumni of the Maryland College of Pharmacy. This society continued its separate existence as such or as the Alumni Association of the Maryland College of Pharmacy until 1907, when the General Alumni Association of the University of Maryland was formed. Following the organization of the General Alumni Association, the Society remained dormant until June 4, 1926, when it was reorganized as the Alumni Association of the School of Pharmacy of the University of Maryland. The active membership of the Association is now approximately 600 and is growing steadily. The following are its officers:

OFFICERS (1948-49)

- DR. H. A. B. DUNNING, *Honorary President*
 JOSEPH COHEN, *President of the Association*
 3740 Dolfield Avenue, Baltimore, Md.
 WILMER J. HEER, *First Vice-President*
 1504 East 33rd Street, Baltimore, Md.
 FRANK BLOCK, *Second Vice-President*
 4007 Liberty Heights Avenue, Baltimore, Md.
 B. OLIVE COLE, *Secretary*
 32 S. Greene Street, Baltimore, Md.
 MRS. FRANK M. BUDACZ, *Treasurer*
 1202 Argonne Drive, Baltimore, Md.

EXECUTIVE COMMITTEE

- JOSEPH COHEN, *Chairman*
 The Honorary President (*Ex Officio*)
 FRANK BALASSONE
 WILLIAM M. GOULD
 MATHAIS PALMER
 SAMUEL I. RAICHLEN

COMMITTEE ON SCHOOL OF PHARMACY OF THE MARYLAND
PHARMACEUTICAL ASSOCIATION

When the School of Pharmacy became a part of the State University in 1920, the Maryland Pharmaceutical Association in order to assist in the advancement of pharmaceutical education, appointed a standing committee, known as the Committee on School of Pharmacy. The duties of this Committee are to represent the Association in all matters pertaining to the School of Pharmacy and pharmaceutical education. The following are the present members of the Committee:

Harry S. Harrison, *Chairman*

- | | |
|-------------------|---------------------|
| Marvin J. Andrews | L. M. Kantner |
| John L. Asbill | Harry R. Meagher |
| Joseph Cohen | Stephen J. Provenza |
| Irving Freed | Raphael H. Wagner |

CURRICULUM
COURSES, HOURS AND CREDITS

TITLE AND NUMBER OF COURSE	FIRST SEMESTER				SECOND SEMESTER			
	Hrs. Per Week				Hrs. Per Week			
	Didactic	Lab'y	Total	Credits	Didactic	Lab'y	Total	Credits
FIRST YEAR								
*Botany 1, Structural.....					2	4	6	3
†Chemistry 1, 3, Inorganic and Qualitative Analysis.....	2	6	8	4	2	6	8	4
†English 1, 2, Survey and Composition.....	3		3	3	3		3	3
†Mathematics 10 or 15.....	3		3	3			3	3
†Mathematics 11 or 17.....					3		3	3
†Modern Language 1, 2, or 6, 7, French or German.....	3		3	3	3		3	3
†Speech 1, 2, Reading and Speaking.....	1		1	1	1		1	1
†Zoology 1, General.....	2	6	8	4				
				18				17
SECOND YEAR								
Botany 21, Macroscopical.....	2	6	8	4				
Botany 22, Microscopical.....					6		6	2
†Chemistry 35, 37, Organic.....	3		3	2	3		3	2
†Chemistry 36, 38, Organic.....		4	4	2		4	4	2
Pharmacy 1, 2 Galenical.....	4	4	8	5	4	4	8	5
†Physics 10, 11, General.....	3	2	5	4	3	2	5	4
Physiology 22, General.....					2	4	6	3
				17				18
THIRD YEAR								
*Bacteriology 1, General.....	2	4	6	4				
*Bacteriology 115, Serology and Immunology.....					2	4	6	4
*Chemistry 15, Quantitative Analysis.....	2	6	8	4				
Chemistry 53, Pharmaceutical Testing and Assaying.....					2	6	8	4
*Economics 37, Elementary.....					3		3	3
Pharmacology 51, 52, Pharm., Toxicology and Therapeutics.....	2	4	6	3	2	4	6	3
Pharmacy 51, 52, Dispensing.....	2	6	8	4	2	6	8	4
Pharmacy 61, History of.....	2		2	2				
				17				18
FOURTH YEAR (Required)								
Chemistry 111, 113, Medicinal Products.....	3		3	2	3		3	2
Economics 51, Pharmaceutical.....	2	3	5	3				
First Aid 1, Standard.....					1		1	1
Law 62, Pharmacy Laws and Regulations.....					3		3	3
Pharmacy 101, 102, Manufacturing.....	2	2	4	3	2	2	4	3
Pharmacy 72, Pharmaceutical Practice.....					2	3	5	2
Pharmacology 111, Biological Assaying.....	2	4	6	4				
Electives†.....				6				6
				17				17
FOURTH YEAR (Electives)‡								
Botany 101, 102, Taxonomy.....	1	2	3	2	1	2	3	2
Botany 111, 113, Plant Anatomy.....	2		2	2	2		2	2
Botany 112, 114, Plant Anatomy.....		4	4	2		4	4	2
Chemistry 99, Glassworking.....		3	3	1		3	3	1
Chemistry 112, 114, Medicinal Products.....		4	4	2		4	4	2
†Chemistry 187, 189, Physical.....	3		3	3	3		3	3
†Chemistry 188, 190, Physical.....		6	6	2		6	6	2
*Chemistry 151, 153, Physiological.....	2		2	2	2		2	2
*Chemistry 152, 154, Physiological.....		4	4	2		4	4	2
†English 3, 4, Composition and World Literature.....	3		3	3	3		3	3
†Language 6, 7, Scientific German or French.....	3		3	3	3		3	3
†Mathematics 20, 21, Calculus.....	3		3	3	3		3	3
Pharmacy 111, 112, Advanced Prescription Compounding.....		6	6	2		6	6	2
Pharmacy 120, Hospital Pharmacy Administration.....	2		2	2				
†Zoology 5, Comparative Vertebrate Morphology.....					2	6	8	4

† Instruction in these courses given by the College of Arts and Sciences.

* Additional courses approved for credit in the College of Arts and Sciences.

‡ The electives must be approved by the Dean.

CURRICULUM
SUMMARY OF HOURS AND CREDITS

COURSE	Didactic	Laboratory	Total	Credit hours
FIRST YEAR				
Botany 1.....	32	64	96	3
Chemistry 1, 3.....	64	192	256	8
English 1, 2.....	96	.....	96	6
Mathematics 10, 15.....	48	.....	48	3
Mathematics 11, 17.....	48	.....	48	3
Modern Language 1, 2 or 6, 7.....	96	.....	96	6
Speech 1, 2.....	32	.....	32	2
Zoology 1.....	32	96	128	4
Total.....	448	352	800	35
SECOND YEAR				
Botany 21.....	32	96	128	4
Botany 22.....	.....	96	96	2
Chemistry 35, 37.....	96	.....	96	4
Chemistry 36, 38.....	.....	128	128	4
Pharmacy 1, 2.....	128	128	256	10
Physics 10, 11.....	96	64	160	8
Physiology 22.....	32	64	96	3
Total.....	384	576	960	35
THIRD YEAR				
Bacteriology 1.....	32	64	96	4
Bacteriology 115.....	32	64	96	4
Chemistry 15.....	32	96	128	4
Chemistry 53.....	32	96	128	4
Economics 37.....	48	.....	48	3
Pharmacology 51, 52.....	64	128	192	6
Pharmacy 51, 52.....	64	192	256	8
Pharmacy 61.....	32	.....	32	2
Total.....	336	640	976	35
FOURTH YEAR (Required)				
Chemistry 111, 113.....	96	.....	96	4
Economics 51.....	32	48	80	3
First Aid 1.....	16	.....	16	1
Law 62.....	48	.....	48	3
Pharmacy 101, 102.....	64	64	128	6
Pharmacy 72.....	32	48	80	2
Pharmacology 111.....	32	64	96	4
Electives.....	96†	288†	384†	12
Total.....	416	512	928	35
FOURTH YEAR (Electives)				
Botany 101, 102.....	32	64	96	4
Botany 111, 113.....	64	.....	64	4
Botany 112, 114.....	.....	128	128	4
Chemistry 99.....	.....	96	96	2
Chemistry 112, 114.....	.....	128	128	4
Chemistry 187, 189.....	96	.....	96	6
Chemistry 188, 190.....	.....	192	192	4
Chemistry 151, 153.....	64	.....	64	4
Chemistry 152, 154.....	.....	128	128	4
English 3, 4.....	96	.....	96	6
Language 6, 7.....	96	.....	96	6
Mathematics 20, 21.....	96	.....	96	6
Pharmacy 111, 112.....	.....	192	192	4
Pharmacy 120.....	32	.....	32	2
Zoology 5.....	32	96	128	4
SUMMARY				
First Year.....	448	352	800	35
Second Year.....	384	576	960	35
Third Year.....	336	640	976	35
Fourth Year.....	416	512	928	35
Total.....	1,584	2,080	3,664	140

† Average.

DESCRIPTION OF COURSES

BACTERIOLOGY

1. GENERAL BACTERIOLOGY—(4) Third year, first semester, two lectures, two laboratories. Shay and Hsie.

Introduction to general bacteriology with special emphasis on the study of pathogenic microorganisms, including the public health aspects of the prevention and control of communicable diseases.

FOR GRADUATES AND ADVANCED UNDERGRADUATES

115. SEROLOGY AND IMMUNOLOGY—(4) Third year, second semester, two lectures, two laboratories. Shay and Hsie.

A study of the principles of immunity, including the preparation and use of biological products employed in the prevention and treatment of infectious diseases.

FOR GRADUATES

200, 201. CHEMOTHERAPY—(2) One lecture. (Given in alternate years.) Shay.

A study of the chemistry, toxicity, pharmacology and therapeutic value of drugs employed in the treatment of parasitic diseases.

202, 203. REAGENTS AND MEDIA—(2) One Lecture. (Given in alternate years.) Shay.

A study of the methods of preparation and use of bacteriological reagents and media.

210. SPECIAL PROBLEMS IN BACTERIOLOGY. Shay.

A laboratory course on selected problems in bacteriology. Credit determined by the amount and quality of work performed.

211. PUBLIC HEALTH—(2) One lecture. Shay.

Prerequisites—Bacteriology 1, 115.

Lectures and discussions on the organization and administration of state and municipal health departments and private health agencies. The courses will also include a study of laboratory methods.

221. RESEARCH IN BACTERIOLOGY. Shay.

Credit determined by the amount and quality of the work performed.

BOTANY

1. STRUCTURAL BOTANY—(3) First year, second semester, two lectures, one laboratory. Slama and Pumpian.

A course in structural botany (organography) including classification and physiology of the plant structures.

21. PHARMACOGNOSY (MACROSCOPICAL)—(4) Second year, first semester, two lectures, two laboratories. Slama and Pumpian.

Prerequisite—Botany 1.

A study of the cultivation, collection and commerce of crude drugs, with special emphasis on the physical characteristics used in the identification and in the detection of adulterations.

* Courses intended primarily for freshmen and sophomores are numbered 1-49; for juniors and seniors 50-99; for advanced undergraduates and graduates 100-199; and for graduates only 200-299.

The semester hour, which is the unit of credit, is the equivalent of a subject pursued one period a week for one semester. A laboratory period is equivalent to one lecture or recitation period.

22. PHARMACOGNOSY (MICROSCOPICAL)—(2) Second year, second semester, two laboratories. Slama and Pumpian.

Prerequisite—Botany 1.

A microscopic study of the structure of medicinal plants, including practice in the examination of the official powdered drugs and adulterants.

FOR GRADUATES AND ADVANCED UNDERGRADUATES

101, 102. TAXONOMY OF THE HIGHER PLANTS—(2-4) Fourth year, one lecture and one laboratory. Elective for students who contemplate taking advanced work in pharmacognosy. Given in alternate years. Slama.

Prerequisite—Botany 1, 21.

A study of the kinds of seed plants and ferns, their classifications, and field work on local flora. Instruction will be given in the preparation of an herbarium.

111, 113. PLANT ANATOMY—(2-4) Fourth year, two lectures. Slama.

Prerequisite—Botany 1, 21, 22.

Lectures covering advanced plant anatomy with special emphasis placed on the structure of roots, stems and leaves of vascular plants.

112, 114. PLANT ANATOMY—(2-4) Fourth year, two laboratories. Slama.

Prerequisites—Botany 1, 21, 22, 111, 113 or may be taken simultaneously with 111, 113.

Laboratory work covering Botany 111, 113.

FOR GRADUATES

201, 202. ADVANCED STUDY OF VEGETABLE POWDERS—(4-8) Two lectures and two laboratories. Slama.

Prerequisites—Botany 111, 113, 112, 114.

A study of powdered vegetable drugs and spices from the structural and microchemical standpoints, including practice in identification and detection of adulterants. Given in alternate years.

211, 212. ADVANCED PHARMACOGNOSY—(4-8) Two lectures and two laboratories. Slama.

Prerequisites—Botany 111, 113, 112, 114.

A study of many crude drugs not ordinarily studied in other pharmacognosy courses. Special attention will be given to practical problems and to the identification and detection of adulterants.

220. RESEARCH IN PHARMACOGNOSY—Credit according to the amount and quality of work performed. Slama.

CHEMISTRY

1, 3. GENERAL INORGANIC CHEMISTRY AND QUALITATIVE ANALYSIS—(8) First year, two lectures, two laboratories. Hager and Adams.

A study of the metals and non-metals with emphasis on chemical theory and important generalizations. The laboratory work deals with fundamental principles, the preparation and purification of compounds, and the systematic qualitative analysis of the more common metals and acid radicals.

35, 37. ELEMENTARY ORGANIC CHEMISTRY—(4) Second year, two lectures. Hager and Stahl.

Prerequisite—Chemistry 1, 3.

A study of the fundamentals of organic chemistry.

36, 38. ELEMENTARY ORGANIC LABORATORY—(4) Second year, two laboratories. Hager and Stahl.

Prerequisite—Chemistry 35, 37 or current registration therein.

A study of the general procedures used in organic laboratory.

15. QUANTITATIVE ANALYSIS—(4) Third year, first semester, two lectures and two laboratories. Weiland, Magiros and Ellin.

Prerequisite—Chemistry 35, 37.

A study of the gravimetric and volumetric procedures and theory, and their application to pharmaceutical analyses.

53. PHARMACEUTICAL TESTING AND ASSAYING—(4) Third year, second semester, two lectures and two laboratories. Hager, Magiros and Ellin.

Prerequisites—Chemistry 15, 35, 37.

Quantitative methods applied to the chemical assay of crude drugs and of official preparations.

99. GLASSWORKING—(1-2) Laboratory, fourth year, either semester. Hager.

Prerequisite—Consent of the instructor.

Simple operations in the bending, sealing, blowing and grinding of glass.

FOR GRADUATES AND ADVANCED UNDERGRADUATES

111, 113. CHEMISTRY OF MEDICINAL PRODUCTS—(4) Fourth year, three lectures. Hager.

Prerequisites—Chemistry 35, 37, 53.

A survey of the structural relationships, the synthesis and chemical properties of medicinal products.

112, 114. CHEMISTRY OF MEDICINAL PRODUCTS—(2-4) Fourth year, two laboratories. Hager.

Prerequisite—Chemistry 111, 113, or may be taken simultaneously with Chemistry 111, 113.

Laboratory exercises dealing with important and characteristic chemical properties of pharmaceutical and medicinal products.

142, 144. ADVANCED ORGANIC LABORATORY—(2-4) Any one or two semesters. Hager.

Prerequisite—Chemistry 112, 114, or equivalent.

Laboratory work devoted to more difficult organic preparations and a study of the quantitative determination of carbon, hydrogen, nitrogen and halogen in organic compounds.

146, 148. IDENTIFICATION OF ORGANIC COMPOUNDS—(2-4) One lecture, two laboratories. Hager.

Prerequisite—Chemistry 112, 114.

The systematic identification of organic compounds.

187, 189. PHYSICAL CHEMISTRY—(6) Three lectures. Estabrook.

Prerequisites—Chemistry 15, 35, 37 and Physics 10, 11.

A study of the laws and theories of chemistry, including the gas laws, kinetic theory, liquids, solutions, elementary thermodynamics, thermochemistry, equilibrium, chemical kinetics and electro-chemistry.

188, 190. PHYSICAL CHEMISTRY—(4) Two laboratories. Estabrook.
Prerequisites—Chemistry 187, 189 or may be taken simultaneously with Chemistry 187, 189.

Quantitative experiments are performed which demonstrate physico-chemical principles, and acquaint the student with precision apparatus.

151, 153. PHYSIOLOGICAL CHEMISTRY—(4) Two lectures. Chapman.
Prerequisites—Chemistry 35, 37 and Physiology 22.

A general survey of the subject including a discussion of digestion, metabolism, vitamins, hormones and other topics of pharmaceutical interest.

152, 154. PHYSIOLOGICAL CHEMISTRY LABORATORY—(4) Two laboratories. Chapman, Gittinger, and Bryan.

Prerequisites—Chemistry 35, 37, 151, 153, or may be taken simultaneously with Chemistry 151, 153.

Laboratory exercises mostly quantitative, designed to illustrate the more important procedures in physiological chemistry, urinalysis and blood analysis.

FOR GRADUATES

201, 203. SURVEY OF PHARMACEUTICAL CHEMISTRY—(4) Two lectures. Hager.

Prerequisite—Chemistry 111, 113.

A study of the terpenes, carotenes, sterols and stereoisomerism.

211, 213. CHEMISTRY OF THE ALKALOIDS—(4) Two lectures. Hager.

Prerequisite—Chemistry 111, 113.

A survey of the chemical structure and reactions of pharmacologically active bases.

220. ADVANCED PHARMACEUTICAL SYNTHESIS—(2-6) Laboratory and conferences. Hager.

Prerequisite—Chemistry 142, 144.

Application of synthetic procedures in the preparation of various medicinal chemicals and their intermediates.

222. ADVANCED PHARMACEUTICAL ANALYSIS—(1-4) Laboratory and conferences. Hager.

Prerequisite—Chemistry 146, 148.

A laboratory study of the analytical procedures and methods as applied to official, proprietary, natural and synthetic drugs, their intermediates and derivatives.

230. PHARMACEUTICAL CHEMISTRY SEMINAR—(1) Each semester. Hager.

Required of students majoring in pharmaceutical chemistry.

Reports of progress and survey of recent developments in pharmaceutical chemistry.

235. RESEARCH IN PHARMACEUTICAL CHEMISTRY—Credit determined by the amount and quality of work performed. Hager.

258. ORGANIC QUALITATIVE ANALYSIS—(2-4) Either semester. Two to four laboratories. Hager.

Prerequisite—Chemistry 146, 148 or equivalent.

Laboratory work devoted to the identification of pure organic substances and mixtures.

BUSINESS ADMINISTRATION

37. FUNDAMENTALS OF ECONOMICS—(3) Third year, second semester, three lectures. Cole and Shulman.

A study of the general fundamentals of economics—production, exchange, distribution and consumption of wealth.

51. PHARMACEUTICAL ECONOMICS—(3) Fourth year, first semester, two lectures and one laboratory. Cole and Shulman.

A study of the marketing of drug products, the management of retail pharmacies, and the fundamental principles of accounting, including practice in bookkeeping, banking and financial statements.

62. PHARMACY LAWS AND REGULATIONS—(3) Fourth year, second semester, three lectures. Cole.

Fundamentals of law of importance to pharmacists, with special reference to the regulations of the practice of pharmacy; Federal and State laws and regulations pertaining to sale of poisons, narcotics, drugs, cosmetics and pharmaceutical preparations.

ENGLISH

1, 2. SURVEY AND COMPOSITION—(6) First year, three lectures. Ballman.

Prerequisite—Four units of high school English.

A study of style, syntax, spelling and punctuation, combined with a historical study of English and American literature of the nineteenth and twentieth centuries. Written themes, book reviews and exercises.

3, 4. COMPOSITION AND WORLD LITERATURE—(6) Elective, three lectures. Ballman.

Prerequisite—English 1, 2.

Practice in composition. An introduction to world literature, foreign classics being read in translation.

SPEECH

1, 2. PUBLIC SPEAKING—(3) First year, one lecture. Ballman.

The principles and techniques of oral expression, visible and audible; the preparation and delivery of short original speeches; impromptu speaking; reference readings, short reports, etc.

FIRST AID

1. STANDARD FIRST AID COURSE—(1) Fourth year, second semester, one lecture, one demonstration.

Given by an instructor from the Baltimore Chapter of the American Red Cross.

MATHEMATICS

10. ALGEBRA—(3) First year, first semester, three lectures. Richeson.

Prerequisite—One unit of algebra.

Fundamental operations, factoring, fractions, linear equations, exponents and radicals, logarithms, quadratic equations, variation, binomial theorem, and theory of equations.

11. TRIGONOMETRY AND ANALYTICAL GEOMETRY—(3) First year, second semester, three lectures. Richeson.

Prerequisite—Mathematics 10 or 15. Required of those students who do not offer one-half unit of trigonometry.

Trigonometric functions, identities, the radian and mil, graphs, addition formulas, solution of triangles, coordinates, locus problems, the straight line and circle, conic sections and graphs.

15. COLLEGE ALGEBRA—(3) First year, first semester, three lectures. Richeson.

Prerequisite—High school algebra completed.

Fundamental operations, variation, functions and graphs, quadratic equations, theory of equations, binomial theorem, complex numbers, logarithms, determinants and progressions.

17. ANALYTIC GEOMETRY—(3) First year, second semester, three lectures. Richeson.

Prerequisite—High school trigonometry and mathematics 15.

Coordinates, locus problems, the straight line and circle, graphs, transformation of coordinates, conic sections, parametric equations, transcendental equations, and solid analytic geometry.

MATH 20, 21. CALCULUS—(6) Electives, three lectures. Richeson.

Prerequisite—Mathematics 15 and 17 and approval of instructor.

Limits, derivatives, differentials, maxima and minima, curve sketching, rates, curvature, kinematics, integration, geometric and physical applications of integration, partial derivatives, space geometry, multiple integrals, infinite series and differential equations. Given in alternate years.

FOR GRADUATES AND ADVANCED UNDERGRADUATES

MATH 152, 153. MATHEMATICAL STATISTICS (2, 2)—Prerequisites, differential and integral calculus.

Frequency distributions and their parameters, multivariate analysis and correlation, theory of sampling, analysis of variance, statistical inference. Illustrations will be drawn from the biological sciences. Given in alternate years.

MODERN LANGUAGES

1, 2. FRENCH—ELEMENTARY—(6) First year, three lectures. Schradieck.

Students who offer two units in French for entrance, but whose preparation is not adequate for second-year French, receive half credit for this course.

Elements of grammar, composition, pronunciation and translation.

1, 2. GERMAN—ELEMENTARY—(6) First year, three lectures. Schradieck.

Students who offer two units in German for entrance, but whose preparation is not adequate for second-year German receive half credit for this course.

Elements of grammar, composition, punctuation and translation.

Students will be assigned to one of the two languages by the department. The assignment will ordinarily be made on the basis of the student's previous training.

Six semester hours credit in Spanish will be accepted as satisfying the Modern Language requirement.

FOR GRADUATES AND UNDERGRADUATES

6, 7. INTERMEDIATE SCIENTIFIC FRENCH—(6) Elective, three lectures. Schradieck.

Prerequisite—French 1 and 2 or equivalent.

Translation, grammar, exercises in pronunciation. Reading of scientific texts.

6, 7. INTERMEDIATE SCIENTIFIC GERMAN—(6) Elective, three lectures. Schradieck.

Prerequisite—German 1 and 2 or equivalent.

Reading of technical prose, with grammar review.

PHARMACOLOGY

51, 52. PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS—(6) Third year, two lectures and two laboratories. Chapman, Gittinger, Bryan and Boggio.

Prerequisite—Physiology 22.

A study of the pharmacology, toxicology and therapeutic uses of medicinal substances with special reference to the drugs and preparations of the United States Pharmacopoeia and the National Formulary.

FOR GRADUATES AND ADVANCED UNDERGRADUATES

111. OFFICIAL METHODS OF BIOLOGICAL ASSAY—(4) Fourth year, first semester, two lectures and two laboratories. Chapman, Gittinger and Bryan.

Prerequisite—Pharmacology 51, 52.

A study of the methods of biological assay official in the United States Pharmacopoeia and the National Formulary.

FOR GRADUATES

201, 202. METHODS OF BIOLOGICAL ASSAY—(8) Two lectures and two laboratories. Chapman.

Prerequisite—Pharmacology 111.

The application of statistical methods to the problems of biological assay and a study of the more important unofficial methods for the assay of therapeutic substances. Given in alternate years.

211, 212. SPECIAL STUDIES IN PHARMACODYNAMICS—(8) Two lectures and two laboratories. Chapman.

Prerequisite—Pharmacology 51, 52 and the approval of the instructor.

The procedures involved in pharmacological analysis and in the determination of the site of action and the nature of action of drugs. Given in alternate years.

221, 222. SPECIAL STUDIES IN BIOLOGICAL ASSAY METHODS—(4-8) Credit according to the amount of work undertaken after consultation with the instructor. Conferences and laboratory work. Chapman.

Prerequisite—Pharmacology 111, 201, 202.

Special problems in the development of biological assay methods and comparative standards.

250. RESEARCH IN PHARMACOLOGY. Chapman.

Properly qualified students may arrange with the instructor for credit and hours.

PHARMACY

1, 2. GALENICAL PHARMACY—(10) Second year, four lectures and two laboratories. Allen, Rossberg and Meyers.

A study of the theory of pharmaceutical manipulations, including mathematical calculations, and the practical application of the theory to the manufacture of galenical preparations.

51, 52. DISPENSING PHARMACY—(8) Third year, two lectures and two laboratories. Wolf, Allen, Rossberg and Balassone.

Prerequisites—Pharmacy 1, 2.

A study of the compounding and dispensing of prescriptions.

61. HISTORY OF PHARMACY—(2) Third year, first semester, two lectures. Balassone.

A study of the history of pharmacy from its beginning with special emphasis on the history of American pharmacy.

72. PHARMACEUTICAL PRACTICE—(2) Fourth year, second semester, two lectures and 48 hours of practical work in hospital pharmacy. Wolf, Allen, Noel, Neistadt and Lew.

Prerequisites—Pharmacy 1, 2, 51, 52.

Practical work in drug store arrangement; the handling of drugs, medicines and drug sundries, and dispensing in hospital pharmacies.

FOR ADVANCED UNDERGRADUATES AND GRADUATES

101, 102. MANUFACTURING PHARMACY—(6) Fourth year, two lectures and one laboratory. Allen and Balassone.

A continuation of the course given in the second year, with special reference to the methods employed in the manufacture of pharmaceuticals on a commercial scale.

111, 112. ADVANCED PRESCRIPTION COMPOUNDING—(6) Two laboratories. Allen and Meyers.

Prerequisites—Pharmacy 1, 2, 51, 52.

Advanced laboratory study of the various methods of compounding special prescriptions and galenical preparations.

120. HOSPITAL PHARMACY ADMINISTRATION—(2) Two lectures. Purdum.

A study of hospital pharmacy practice and administration.

FOR GRADUATES

201, 202. ADVANCED PHARMACEUTICAL TECHNOLOGY—(8) Two lectures and two laboratories. Purdum and Allen.

A study of pharmaceutical manufacturing processes, equipment and physical plant arrangement.

211, 212. SURVEY OF PHARMACEUTICAL LITERATURE—(2) One lecture. Purdum.

Lectures and topics on the literature pertaining to pharmacy, with special reference to the original and development of the works of drug standards and the pharmaceutical periodicals.

221, 222. HISTORY OF PHARMACY—(4) Two lectures. Purdum.

Lectures and assignments on the development of pharmacy in America and the principal countries of Europe. Given in alternate years.

230. PHARMACEUTICAL SEMINAR—(1) Each semester. Purdum.

Required of students majoring in pharmacy.

Reports of progress in research and surveys of recent developments in pharmacy.

235. RESEARCH IN PHARMACY—Credit and hours to be arranged. Purdum.

PHYSICS

10, 11. GENERAL PHYSICS—(8) Second year, three lectures, one laboratory. Estabrook and Battey.

Prerequisites—Mathematics 10, 11 or 15, 17.

A study of the principles of mechanics, heat, wave motion, sound, light and electricity.

FOR GRADUATES AND ADVANCED UNDERGRADUATES

121, 122. ELECTRICITY AND MAGNETISM—(6) Two lectures, one laboratory. Estabrook.

Prerequisites—Physics 10, 11 and Mathematics 20, 21.

Given in alternate years.

FOR GRADUATES

200, 201. INTRODUCTION TO THEORETICAL PHYSICS—(10) Five lectures. Estabrook.

Prerequisites—Advanced standing in Physics.

208, 209. THERMODYNAMICS—(4) Two lectures. Estabrook.

Prerequisites—Chemistry 188, 190.

Given in alternate years.

PHYSIOLOGY

22. PHYSIOLOGY—(3) Second year, second semester, two lectures, one laboratory. Chapman, Gittinger and Boggio.

Prerequisite—Zoology 1.

A short course in the fundamentals of physiology, designed to meet the requirements of students in pharmacy.

ZOOLOGY

1. GENERAL ZOOLOGY—(4) First year, first semester, two lectures and two laboratories. Applegarth and Reincke.

A study with laboratory dissection, of typical invertebrate and vertebrate animals, with an introductory discourse on basic biological principles. This course is intended to be cultural and practical with special emphasis on a foundation for future related courses.

5. COMPARATIVE VERTEBRATE MORPHOLOGY—(4) Elective, Second semester, two lectures and two laboratories. Applegarth.

A comparative study of the principal organ system of representative Chordates with laboratory dissection and demonstration.

TEXT BOOKS

Each student is required to have his own text books. The books required in each course will be announced at the beginning of each semester.

CHANGES IN CURRICULUM

The Faculty Council reserves the right to make, at any time, such changes in the curriculum as may be found necessary or desirable.

THE SCHOOL OF NURSING

MEMBERSHIP AND ACCREDITATION

1. The University of Maryland, which incorporates the School of Nursing with all of the other Schools of the University, is a member of the Association of American Colleges, and is accredited by the Middle States Association of Colleges and Secondary Schools.
2. The School of Nursing is accredited by the Maryland State Board of Examiners of Nurses and other states that reciprocate with the State of Maryland.
3. The hospital, which is the teaching laboratory for the students of the School of Nursing, is approved by the American College of Surgeons, the American Medical Association-Residents and Interns, the American Hospital Association, and the Maryland Hospital Association. It is also a participant in the Blue Cross Plan.

The University of Maryland has the following educational organizations:

At Baltimore

The School of Dentistry
The School of Law
The School of Medicine

The School of Nursing
The School of Pharmacy
The College of Special and Continuation Studies

At College Park

The College of Agriculture
The College of Arts and Sciences
The College of Business and Public Administration
The College of Commerce
The College of Education
The College of Engineering

The College of Home Economics
The Graduate School
The Department of Military Science and Tactics
The Department of Physical Education and Recreation
The Summer School

Each school has its own Faculty Council, composed of the Dean and members of its faculty; each Faculty Council controls the internal affairs of the group it represents.

PROPOSED CALENDAR FOR 1949-1950

September 6, 1949	Tuesday	Admission of fall class
Dec. 23-Jan. 2, 1950	Friday-Monday	Christmas Holidays
February 14	Tuesday	Admission of spring class
September 6	Wednesday	Admission of fall class

FACULTY, DEPARTMENT OF NURSING EDUCATION

- FLORENCE MEDA GIPE, R.N., M.S., Director of the Department of Nursing Education and Nursing Service.
- MARGARET HAYES, R.N., M.S., Associate Director, Director of Student Guidance.
- MARIE P. ZEC, R.N., B.S., Assistant Director, Nursing Education, Instructor, Nursing Arts.
- EVA BRADLEY, R.N., B.S., Supervisor, Biological Sciences.
- MARY E. GROTEFEND, R.N., M.S., Instructor, Social Sciences, Coordinator of Student Experience in Out-Patient Department.
- CECILIA ZITKUS, A.B., R.N., Instructor, Nursing Arts.
- HELEN BAHR, R.N., B.S., Clinical Instructor, Medical and Surgical Nursing.
- LOIS FRALEY, B.S., R.N., Clinical Instructor, Medical and Surgical Nursing.
- HELEN W. TAYLOR, B.S., R.N., Clinical Instructor, Medical and Surgical Nursing—Evening.
- KATHRYN WILLIAMS, B.S., R.N., Clinical Instructor, Operating Room Technique.
- ELVA LANTZ, R.N., Clinical Instructor, Obstetrical Nursing.
- FRANCES T. REED, R.N., B.S., Clinical Instructor, Nursing of Children.
- ANNA HOLMES, R.N., M.P.H., Supervisor, Public Health Nursing

ASSISTANTS IN ADMINISTRATION

- JEANNE WIEMAN.....Secretary to Director of Nursing
- JEANNE LOWENTHALSecretary
- CLARA MCGOVERN, R.N.....Supervisor, Records
- SIMONE HURSTLibrarian
- EDITH MUTCH, R.N.....Librarian
- MARTHA MALLON, R.N.....Director, Nurses' Residence

LECTURERS

- JAMES G. ARNOLD, JR., M.D., Associate Professor of Neurological Surgery.
- A. MAYNARD BACON, JR., B.S., M.D., Lecturer in Pediatrics.
- RUTH BALDWIN, M.D., Instructor in Pediatrics.
- HARRY C. BOWIE, B.S., M.D., Instructor in Surgery and Surgical Anatomy.
- J. EDMUND BRADLEY, M.D., Associate Clinical Professor of Pediatrics.
- OTTO C. BRANTIGAN, B.S., M.D., Professor of Surgical Anatomy and Associate Professor of Surgery.
- RUTH E. BROADBELT, Instructor in Lettering.
- ANN VIRGINIA BROWN, A.B., Instructor in Biological Chemistry.
- T. NELSON CAREY, M.D., Professor of Clinical Medicine.
- BEVERLEY C. COMPTON, A.B., M.D., Associate Professor in Gynecology.
- EDWARD F. COTTER, M.D., Assistant Professor of Medicine, Instructor in Neurology.
- R. ADAMS COWLEY, M.D., Fellow in Surgery.
- L. KATHRYN DICE, Ed.D., Instructor in Psychology.

- FRANCIS G. DICKEY, M.D., Associate Professor in Medicine.
EVERETT DIGGS, B.S., M.D., Instructor in Gynecology.
WILLIAM K. DIEHL, B.S., M.D., Instructor in Gynecology.
MILES DRAKE, M.S., M.D., Instructor in Pediatrics.
JEROME FINEMAN, M.D., Instructor in Pediatrics.
MOSES GELLMAN, B.S., M.D., Associate Professor in Orthopedic Surgery.
FRANK W. HACHTEL, M.D., Professor of Bacteriology.
MARY L. HAYLECK, M.D., Instructor in Pediatrics.
JOHN F. HOGAN, M.D., Associate Professor in Genito-Urinary Surgery.
CLEWELL HOWELL, B.S., M.D., Associate Professor in Pediatrics.
HARRY C. HULL, M.D., Associate Professor of Surgery.
MEYER W. JACOBSON, M.D., Associate Professor in Medicine.
F. EDWIN KNOWLES, JR., M.D., Associate Professor in Ophthalmology.
VERNON E. KRAHL, Ph.D., Associate Professor of Gross Anatomy.
FREDERICK P. KYPER, M.D., D.Sc., Associate Professor in Rhinology,
Laryngology, and Bronchoscopy, Instructor in Otology.
ARNOLD F. LAVENSTEIN, M.D., Instructor in Pediatrics.
HOWARD B. MAYS, M.D., Associate Professor in Genito-Urinary Surgery,
Instructor in Pathology.
JOHN H. MORRISON, B.S., M.D., Associate Professor in Obstetrics.
RUTH MUSSEY, M.S., Instructor in Pharmacology.
HENRY L. RIGDON, M.D., Associate Professor in Surgery, Assistant Professor
in Surgical Anatomy.
HARRY M. ROBINSON, JR., B.S., M.D., Assistant Professor of Dermatology,
Associate Professor in Medicine.
MILTON S. SACKS, M.D., Associate Professor of Medicine, Head of Clinical
Pathology, Associate Professor in Pathology.
J. KING B. E. SEEGAR, JR., A.B., M.D., Assistant Professor in Obstetrics.
EMIL G. SCHMIDT, Ph.D., LL.B., Professor of Biological Chemistry.
GRACE SHAW, Instructor in Physical Therapy.
E. RODERICK SHIPLEY, A.B., M.D., Assistant Professor in Surgery.
FRANK J. SLAMA, B.S., M.S., Ph.D., Head of Botany and Pharmacognosy
Department.
R. DALE SMITH, Ph.D., Associate Professor of Gross Anatomy.
WILFRED H. TOWNSHEND, JR., A.B., M.D., Instructor in Medicine.
MYRON TULL, A.B., M.D., M.P.H., Lecturer in Hygiene and Public Health.
EDUARD UHLENHUTH, Ph.D., Professor of Gross Anatomy.
HENRY F. ULLRICH, M.D., D.Sc., Associate Professor of Orthopedic Surgery.
ALLEN F. VOSHELL, A.B., M.D., Professor of Orthopedic Surgery.
WILLIAM E. WEEKS, M.D., Associate Professor in Pediatrics.
GLENN S. WEILAND, Ph.D., Assistant Professor of Biological Chemistry.
GIBSON J. WELLS, A.B., M.D., Instructor in Pediatrics.
J. CARLTON WICH, B.S., M.D., Associate Professor in Pediatrics.
GEORGE H. YEAGER, B.S., M.D., Associate Professor of Surgery.

STAFF, DEPARTMENT OF NURSING SERVICE

FLORENCE MEDA GIPE, R.N., M.S., Director of the Divisions of Nursing Education and Nursing Service.

EVA DARLEY, R.N., Associate Director, Nursing Service.

MARTHA HOFFMAN, R.N., Assistant Director, Nursing Service—Evening.

ARMITA TAYLOR, R.N., Assistant Director, Nursing Service—Night.

ADA HINES, R.N., Assistant Director, Nursing Service—Night.

C. LORRAINE NEEL, R.N., Supervisor, Nursing Service.

MARY SAULSBURY, R.N., Supervisor, Nursing Service—Day.

ELEANOR SLACUM, R.N., Supervisor, Nursing Service—Afternoon.

MARGARET ZELL, R.N., Supervisor, Eleventh Floor, Private.

VIRGINIA STACK, R.N., Supervisor, Tenth Floor, Private.

MARGARET RIFFLE, R.N., Supervisor, Ninth Floor, Private.

ELIZABETH AITKENHEAD, R.N., Supervisor, Operating Rooms.

ELIZABETH GOOCH, R.N., Supervisor, Central Supply Room.

FLORA STREETT, R.N., Supervisor, Obstetrical Department.

JUNE GEISER, B.S., R.N., Supervisor, Pediatric Department.

RUTH ANN YOUNG, R.N., Supervisor, Medical and Surgical Nursing,
Fourth Floor.

JUNE S. MOHLER, R.N., Supervisor, Medical and Surgical Nursing,
Third Floor.

FLORENCE WONG, R.N., Supervisor, Special Clinics, Second Floor.

EDITH R. LILLARD, B.S., R.N., Supervisor, Accident Room.

EDITH MILLER, R.N., Supervisor, Out-Patient Department.

VIRGINIA E. GUBISCH, R.N., Head Nurse in Health Office.



Clinical Teaching

PROGRAM OF STUDY

The present School of Nursing offers a program of study, instituted in 1924, to two groups: to those who desire to complete their work in approximately thirty-six months, and to those who desire the five year combined academic study and specialization in nursing. Those who complete the latter course successfully receive the degree of Bachelor of Science with a major in nursing as well as a diploma in nursing.

OBJECTIVES OF THE SCHOOL OF NURSING

In attempting to anticipate the future professional needs of its graduates, the University of Maryland School of Nursing carefully selects young women to educate them to become professional nurses who will administer sympathetic and safe nursing care to the sick, and who will teach the principles of health and prevention of disease needed in an ever-changing society.

FACILITIES FOR EDUCATION

The University of Maryland Hospital, a general hospital, has a capacity of 435 beds and 70 bassinets. The wards and Out-patient Department afford valuable opportunities for the clinical experience of the student nurse as well as for the study of family and community problems. The classroom, laboratories, and library of the School of Medicine are available for instructional purposes. Clinical experience in Psychiatric Nursing is provided at Sheppard and Enoch Pratt Hospital; in Communicable Disease Nursing at Sydenham Hospital; and a limited number of affiliations in Public Health Nursing with the Baltimore City Health Department.

RESIDENT FACILITIES

Student nurses reside in Louisa Parsons Hall. The residence is under the direction of a graduate registered nurse. Plans for a new Nurses Residence and Recreational Center have been approved for the near future.

LIBRARY FACILITIES

The School of Nursing Library is an integral part of the University of Maryland library system, and is under the Director of Libraries of the University. Both scientific and recreational collections of books are provided in the library which is conveniently located on the first floor of the Louisa Parsons Hall.

The facilities of the Medical, Dental, Pharmaceutical, and Law School Libraries are available to the students in the School of Nursing. Additional facilities are provided at the main branch of the Enoch Pratt Free Library, which comprises the public library system for the City of Baltimore; the Peabody Library, which contains a large collection of non-circulating rare books; the Maryland Historical Society Library; and the Library of Congress, which conducts an inter-loan service to the major libraries of the country.

**FEES AND ESTIMATED EXPENSES FOR THREE YEARS
IN THE SCHOOL OF NURSING**

Fixed Fee	\$50.00
Student Activity Fee.....	5.00
Textbooks	60.00
Uniforms	70.00

These costs are approximate and may fluctuate because of changing living costs. Throughout the course students are provided maintenance which includes room, board, and laundry of uniforms. At the present time a limited number of students are allowed the privilege of living at home, permission for which is granted by the Director of Nurses. Students' uniforms will be obtained after admission to the School of Nursing. Shoes, stockings and other personal items are furnished by the students. Expenses such as meals, carfare, and incidentals which the student incurs during periods of affiliation or field trips are borne by the student.

HEALTH SERVICE

The School of Nursing maintains a Health Service for the students under the general direction of a Committee on Health Services. Periodic health examinations are provided for each student.

Vaccination against Typhoid Fever and Smallpox are required of all students before admission to the School of Nursing. Medical care is provided for student nurses. Dental care is not provided in the Health Service, but care is furnished by the Dental School of the University of Maryland at a minimal fee to the student.

Time which is lost due to illness in excess of fourteen days during the three year period, is required to be made up.

EXTRA PROFESSIONAL PROGRAM

The student nurses have a student government organization the function of which is to assist in the government of the school in cooperation with the faculty, and to plan recreational activities.

Upon her admission each new student is met by one of the older students who acts as her big sister. This is a helpful relationship in which the older student assists the new one with advice and suggestions based on her own experience in the School of Nursing.

Recreational facilities are utilized to the utmost. The "Y" pool is rented for Tuesday nights. Here the students enjoy the relaxation of a cool swim or the hilarity of sport in the water after a busy day. During the winter season, basketball is played in the gym of the church next door. In the warmer months, badminton in the court is substituted. Parties for tennis and other sports are made up from time to time and held in the parks or other surrounding facilities. A dance or a big party is held about once a month. The nurses dining room is used for informal dances and a downtown hotel ballroom for formal ones. The adjacent Schools of Medicine, Pharmacy, and Dentistry cooperate in these dances and add to the general pleasure.

Baltimore City is a center of culture and education. It offers much stimulation to the visitor and the inhabitant in the way of drama, music, art, lectures, libraries, and the like. The Student Government Organization plans trips to various functions and points of interest. It buys blocks of tickets for special plays and concerts, and sells them to student nurses at cost because they may not know until the last minute whether they can go.

In cooperation with the Director and the faculty, the students make rules and administer them in regard to discipline, house regulations, and conventions. This not only makes for a better spirit of democracy, but prepares the student for coming leadership and participation in the community.

All of these activities help the students to realize their profession. Interest, relaxation, responsibility, and cooperation are thus fostered and form a vital part of the student's life.

REQUIREMENTS FOR ADMISSION

Evidence of personal stability for nursing in relation to physical health, emotional stability, and general qualifications of personality, cultural development and maturity must be submitted, and a personal interview with the Director of the School of Nursing or one of her assistants is required. If the student is too far distant from the University the interview is given by a member of the National League of Nursing Education in that area.

Graduates of accredited secondary schools will be admitted by certificate upon the recommendation of the principal. In selecting students, more emphasis will be placed upon good marks and other indications of probable success in nursing rather than upon a fixed pattern of subject matter.

English	4 units required for all divisions of the University.
Mathematics	2 units — One unit each of algebra and plane geometry is desirable.
History	1 unit, 2 units are desirable.
Foreign language	1 unit, 2 units are desirable (Latin suggested).
Science	
Biology	1 unit
Chemistry	1 unit
Physics (suggested)	1 unit

Psychometric tests, which are given by the National League of Nursing Education, to determine suitability for nursing are taken by prospective students. Notice and instructions will be sent to the applicant upon review of the credentials by the Committee on Admission. A fee of approximately \$5.00 is to be paid by the applicant for these tests. The fee is paid directly to the League.

Applicants should be 17-35 years of age.

All inquiries concerning admission to the School of Nursing should be addressed to the Director of the School of Nursing who will furnish you, upon request, the necessary forms which must be filed with the University of Maryland.

CURRICULUM

BASIC PROFESSIONAL COURSE (Three-Year Course)



The curriculum covers a period of three years after which time a diploma in Nursing is awarded by the University of Maryland upon recommendation by the School of Nursing. The pre-clinical period consists of the first six months and is devoted primarily to the study of the sciences basic to nursing, the principles and practice of nursing, and the supervised practice of skills learned in the classroom. The students who meet the requirements both in scholastical and clinical work, will be accepted into the School of Nursing as clinical students.

Following the preclinical period students are assigned within a division for five hours of clinical practice and two fifty minute periods of class per day, including meal hours. One free day a week is given, and careful planning makes it possible to give this day off without class interference. At the present time plans are being made to institute a forty hour week.

The Executive Committee may, at any time, terminate a student's course if she fails to meet the standards of the School of Nursing or the University of Maryland.

A three-year Graduate Nurse is pictured at upper left.

FIVE-YEAR COMBINED ARTS AND SCIENCES AND NURSING

The first two years of this curriculum comprising a minimum of 60 semester hours exclusive of hygiene and physical activities, are taken in the College of Arts and Sciences at College Park and the professional training is taken in the School of Nursing of the University of Maryland in Baltimore.

In addition to the Diploma in Nursing, the degree of Bachelor of Science in Nursing may, upon the recommendation of the Director of the School of Nursing, be granted at the end of the professional training.

A student may enter this combined curriculum with advanced standing but the second year, consisting of a minimum of 30 credits, exclusive of physical training, must be completed in College Park. To qualify for the combined degree the student must complete the required work at College Park before beginning the professional training in Baltimore.

In order to receive the Bachelor of Science degree the student must fulfill the grade requirements of the university.

A five-year Graduate Nurse is pictured at lower right.



PRE-NURSING CURRICULUM

Arts-Nursing Curriculum

	Semester	
	I	II
<i>Freshman Year</i>		
Eng. 1, 2—Composition and American Literature.....	3	3
Soc. 1—Sociology of American Life.....	3	....
G. & P. 1—American Government.....	....	3
Chem. 11, 13—General Chemistry.....	3	3
L. S. 1, 2—Library Methods.....	1	1
Modern Language	3	3
Speech 18, 19—Introductory Speech.....	1	1
Hea. 2, 4—Hygiene (Women).....	2	2
Physical Activities	1	1
Total	17	17
<i>Sophomore Year</i>		
Eng. 3, 4—Composition and World Literature.....	3	3
H. 5, 6—History of American Civilization.....	3	3
Zool. 1—General Zoology	4	....
Bact. 1—General Bacteriology .....	....	4
Psych. 1—Introduction to Psychology.....	3	....
Econ. 37—Fundamentals of Economics.....	....	3
Modern Language	3	3
Physical Activities	1	1
Total	17	17

ADMISSION PROCEDURE

Undergraduate Schools: Applicants for admission to the College of Arts and Sciences for Pre-Nursing Course should communicate with the Director of Admissions, University of Maryland, College Park, Maryland.

Applicants from Secondary Schools: Procure an application blank from the Director of Admissions. Fill in personal data requested and ask your principal or headmaster to enter your secondary school record and mail the blank to the Director of Admissions.

To avoid delay, it is suggested that applications be filed not later than July 1 for the fall semester, and January 1 for the spring semester. Applications from students completing their last semester of secondary work are encouraged. If acceptable, supplementary records will be sent upon graduation.

Applicants from Other Colleges and Universities: Secure an application blank from the Director of Admissions. Fill in personal data requested and ask secondary school principal or headmaster to enter secondary school record and send the blank to the Director of Admissions. Request the Registrar of the College or University attended to send a transcript to the Director of Admissions, College Park, Maryland.

Time of Admission: New students should plan to enter the University at the beginning of the fall semester if possible. Students, however, will be admitted at the beginning of either semester.

Two months credit is allowed by the School of Nursing for every thirty semester hours in an accredited college or university, depending upon the scholastic rating of the individual and her ability to adjust in a hospital environment.

ADMISSION OF FRESHMEN

Admission by Certificate: Graduates of accredited secondary schools of Maryland or the District of Columbia will be admitted by certificate upon the recommendation of the principal. Graduates of out-of-state schools should have attained college certification marks, such marks to be not less than one letter or ten points higher than the passing mark.

Veterans and other mature persons who are not high school graduates may qualify for admission to the freshman class by passing prescribed tests comparable to those employed by state authorities to establish high school equivalence.

SUBJECT REQUIREMENTS

In selecting students more emphasis will be placed upon good marks and other indications of probable success in college rather than upon a fixed pattern of subject matter.

English 4 units required for all divisions of the University.

Mathematics

For all colleges one unit each of Algebra and Plane Geometry is desirable. Deviation may be allowed for certain curricula.

Social Science; Natural

and Biological Science.. 1 unit from each group is required; two are desirable.

Foreign Languages..... Those who will follow the professions, enter journalism, foreign trade or service, study the humanities or do research, should have a good foundation in one or more, but none is required.

Electives Fine Arts, trade and vocational subjects are acceptable.

Transfer Students: Only students in good standing as to scholarship and conduct are eligible to transfer. Advanced standing is assigned to transfer students from accredited institutions under the following conditions:

1. A minimum of one year of resident work of not less than 30 semesters hours is necessary for a degree.
2. The University reserves the right at any time to revoke advanced standing if the transfer student's progress is unsatisfactory.

RESIDENTS, NON-RESIDENTS

For Two Years Pre-Nursing at College Park

Fees for Undergraduate Students	First Semester	Second Semester	Total
Fixed Charges	\$82.00	\$83.00	\$165.00
Athletic Fee	15.00	....	15.00
Special Fee	10.00	....	10.00
Student Activities Fee.....	10.00	....	10.00
Infirmary Fee	5.00	....	5.00
Post Office Fee.....	2.00	....	2.00
Advisory and Testing Fee.....	1.00	....	1.00
Total for Maryland Residents.....	\$125.00	\$83.00	\$208.00

Residents of the District of Columbia,
Other States and Countries

Tuition Fee for Non-Resident Students	\$63.00	\$62.00	\$125.00
Total for Non-Resident Students.....	\$188.00	*\$145.00	\$333.00

Board and Lodging

Board	\$170.00	\$170.00	\$340.00
Dormitory Room	\$40-\$45	\$40-\$45	\$80-\$90
Total for Room and Board.....	\$210-\$215	\$210-\$215	\$420-\$430

The Fixed Charges Fee is not a charge for tuition. It is a charge to help defray the cost of operating the University's physical plant and other various services which ordinarily would not be included as a cost of teaching personnel and teaching supplies. Included in these costs would be janitorial services, cost of heat, electricity, water, etc., administrative and clerical cost, maintenance of buildings and grounds, maintenance of libraries, cost of University publications, Alumni Office, the University Business and Financial Offices, the Registrar's Office, the Admissions Office, and any other such services as are supplemental and necessary to teaching and research are supported by this fee.

The Athletic Fee is charged for the support of the Department of Intercollegiate Athletics. All students are eligible and encouraged to participate in all of the activities of this department and to attend all contests in which they do not participate.

The Special Fee is used for improving physical training facilities and for other University projects that have direct relationship to student welfare, especially athletics and recreation. This fee now is allocated to a fund for construction of a stadium, a new combination coliseum and auditorium, and to constructing a new swimming pool, as soon as the fund is sufficient and materials are available.

The Students Activities Fee is a mandatory fee included at the request of the Student Government Association. It covers subscriptions to the Diamondback, student paper, of \$1.50 per year, the Old Line, literary magazine, of \$.75 per year, and the yearbook; class dues, including financial support for the musical and dramatic clubs.

* Students entering the University for the second semester will pay the following additional fees: Athletic, \$7.50; Special, \$5.00; Student Activities, \$8.00; Infirmary, \$2.50; Post Office Fees, \$1.00; Advisory and Testing Fee, \$.50.

LABORATORY AND OTHER FEES FOR FIVE YEAR STUDENTS

Special Fees

Matriculation Fee for undergraduates, payable at first registration in the University	\$10.00
Diploma Fee for Bachelor's degree, payable just prior to graduation	10.00
Cap and Gown Fee, Bachelor's degree.....	2.50

Laboratory Fees Per Semester Course

Bacteriology	\$10.00	Speech	\$1.00
Botany	5.00	Zoology—	
Chemistry—		Introductory	3.00
Introductory	4.00	All other	6.00
All other	10.00		

COURSES OF INSTRUCTION

ANATOMY AND PHYSIOLOGY.

105 Hours

Professor of Anatomy, assisted by a nurse instructor.

The anatomy of the human body is taught by lectures, demonstrations, and exercises on anatomical material. Nearly every organ, organ system and region of the body is demonstrated in actual dissections of the human cadaver. A rich and interesting collection of skeletal material is available; the muscles are shown in a dissected "muscle man"; the circulatory system is demonstrated in a dissection of a cadaver in which colored materials have been injected into the blood vessels. In addition, many beautiful anatomical preparations made by the curator of the department are shown and studied; fresh organs of cattle, sheep and pigs, and occasionally of man. Fresh beef hearts are dissected by the students.

Physiology is taught in combination with anatomy, mostly by lectures supplemented by drawings, charts, models and some experiments.

CHEMISTRY.

60 Hours

Professor of Chemistry, assisted by a nurse instructor.

The fundamental principles of chemistry which are available both in the practice of nursing and in the comprehension of other sciences are studied. The content includes selected topics in general, organic and biological chemistry. Whenever possible, practical applications and laboratory experiments are integrated with the subject matter.

MICROBIOLOGY.

45 Hours

Professor of Bacteriology, assisted by a nurse instructor.

The lectures and laboratory periods are devoted to the study of the essential relation of Microbiology to diagnosis, treatment, prevention of disease, and nursing care. Emphasis is placed upon the important patho-

genic species. This includes: their mode of entrance into the body, their portal of exit, their method of transfer, the tests most helpful in determining their presence, methods of immunization, and a good working knowledge of the various methods used in their destruction.

NUTRITION, FOODS AND COOKERY. **45 Hours**
Teaching Dietitian.

The modern concept regarding the constituents of an adequate diet, the chemistry and mechanics of digestion, absorption, and metabolism of foods, food requirements of various ages, food economics, and the latest information on the role of vitamins in human nutrition are considered. The laboratory work is practical experience, under supervision, in the preparation and service of typical hospital dietaries based on the fundamental principles of cookery.

MENTAL HYGIENE. **15 Hours**

PSYCHOLOGY. Instructor in Psychology. **30 Hours**

This course is designed to give the student some of the basic concepts of dynamic psychology. How people are related to each other so that the student will be helped with her own adjustments and with her understanding of other people are also considered. Interrelationship of mind and body, principles of study habits and personality development are stressed.

SOCIOLOGY. **45 Hours**
Nurse instructor, under the supervision of Sociology Department,
College Park.

Attention is given to an analysis of the American social structure as it relates to nurses and nursing, and also includes the family; metropolitan, small town, and rural communities; population distribution, composition and change; and general social organization.

PROFESSIONAL ADJUSTMENTS. **15 Hours**
Director of the School and Guidance Counsellor.

To give the student a general understanding and appreciation of effective living is the aim of this course. This includes an understanding of professional relationships, personal responsibility, and ethical principles in order to help the student adapt herself to her professional responsibilities.

PHARMACOLOGY AND THERAPEUTICS. **30 Hours**
Professor of Pharmacology, assisted by a nurse instructor.

Those phases of pharmacology necessary for the intelligent use of drugs in the treatment of disease are treated in this course. Methods of administration of drugs, their actions and therapeutic effects, and the symptoms and treatment of poisoning constitute the course of lectures.

NURSING ARTS.**225 Hours****Assistant Director of Nursing Education and instructors.**

An introduction to the study of the ill patient and his needs by means of a consideration of the methods of creating and maintaining a desirable environment for the patient and his family are studied. Personal Hygiene, Bandaging, and Massage are correlated with basic physical and mental care which is required by the patient. This study of nursing care is involved by simple diagnostic procedures. The development of Nursing Care plans by each student is stressed. Recognition of opportunities for health teaching; application of scientific principles studied in biological, physical, chemical and social sciences are related to the nursing care of patients. The development of nursing skills is expected by the assignment of students after classroom demonstration and practice of procedure to care of ill patients. Lectures, laboratory demonstration, practice and hospital experience are included.

MEDICAL AND SURGICAL NURSING.**300 Hours****Supervisor of Clinical Instruction and assistants.**

This course is a survey of the treating of disease by medical or surgical methods and of considering the individual in health and in sickness. Clinical manifestations of disease are emphasized, as well as their relation to social, economic and psychological control in the hospital and in the community. Observation and demonstration at the bedside are arranged, and experience includes related teaching in diet therapy, pharmacology, nursing arts and public health nursing.

OBSTETRICAL NURSING.**60 Hours****Clinical Instructor, Department of Obstetrics, and associates.**

The management and treatment of the normal and the abnormal phases of pregnancy, parturition and puerperium; and the treatment of the normal and abnormal conditions of the newborn infant are studied. Clinical conferences are conducted in which the history, diagnosis, treatment and nursing care of the mother and her infant are presented and discussed. Consideration is also given to the socio-economic relationship to obstetrical nursing.

NURSING OF CHILDREN.**90 Hours****Clinical Instructor, Department of Pediatrics, and associates.**

The normal child, his behavior and the representative diseases of childhood in relation to the socio-economic factors are considered. Nursing practice, nursing care studies, conferences, and clinics are supplementary features of the nursing of children.

NURSING AND HEALTH SERVICE IN THE FAMILY. 45 Hours

Instructor of Public Health Nursing.

This includes the principles of health needs of the community, public health administration and activities. The principles of public health nursing in relation to individual, family and community health are emphasized.

SOCIAL FOUNDATIONS OF NURSING. 45 Hours

Associate Director of Nursing and others.

The aim of this course is to develop a knowledge and an appreciation of the role of the nurse, both personal and professional, in the community, so that she may more easily adapt herself to it, and become a useful citizen through active participation in plans and programs for both health and community welfare.

POLICIES OF THE SCHOOL OF NURSING

1. It is requested that students maintain a satisfactory record in health (both physical and mental), in clinical, and in theoretical work in order to remain as a student in the School of Nursing.
2. An annual report of the achievement of the student is given to the student and a copy is sent to her parents or guardian. The minimum passing grade for individual course is D, but the student must maintain a general average of C or above.
3. A fee of \$5.00 is charged for reexamination in a course.
4. If a student does not pass a specific clinical service, she is permitted to repeat that service on her own time. If she has had other difficulties, in most cases, she may be asked to withdraw from the School of Nursing.
5. When a student is not meeting the standards of the School, both she and her parents or guardian will be notified. Under circumstances beyond her control she will be permitted to bring her record to a satisfactory level of achievement.
6. Students who do not complete satisfactory records with other affiliating agencies, such as Psychiatry, Contagious Diseases, and Public Health will not be recommended for State Board Examinations until evidence of passing these subjects is given in writing by those in charge of these particular courses.
7. Students may be absent from class only upon approval of the instructor teaching that particular class. No student should absent herself from class at any time unless she has at least a "B" average. Instructors and not the Nursing School Office may grant special privileges for classes, and are, in turn, responsible for the content of course covered.

SUMMARY OF STUDENT ENROLLMENT

For the Academic Year, 1948-49, as of July 1, 1949

Resident Collegiate Courses Academic Year	*College Park	Baltimore	Total, Less Duplications
College of Agriculture.....	851	...	851
College of Arts and Sciences.....	2,918	...	2,918
College of Business and Public Administration	2,234	...	2,234
School of Dentistry.....	...	321	321
College of Education.....	1,124	...	1,124
College of Engineering.....	1,581	...	1,581
Graduate School	1,756	417	2,151
College of Home Economics.....	401	...	401
School of Law.....	...	471	471
School of Medicine.....	...	357	357
College of Military Science, Physi- cal Education, and Recreation.....	44	...	44
School of Nursing.....	...	149	149
School of Pharmacy.....	...	290	290
College of Special and Continuation Studies	1,550	1,338	2,885
Total		12,459	3,343
Duplications, Baltimore Intercollege.	...	14	14
Duplications, College Park and Baltimore .....	...	...	56
Net Total		12,459	3,329
Summer School, 1948.....	3,226	224	3,450
Grand Total.....		15,685	3,553
Duplications, Summer and Academic Year	2,114	112	2,226
Duplications, Summer School, Balti- more, and College Park.....	...	...	222
Total, Less Duplications.....		13,571	3,441

* Classified as of first 1948-49 registration.

Mining Courses, Western Maryland.....	105
Fire Service Extension.....	1,205

Short Courses and Conferences

Advanced Insurance Agency Management.....	40
American Cancer Society Workshop.....	27
American Chemical Society.....	250
Dairy Herd Improvement Testers Training Course (Feb.).....	14
Dairy Herd Improvement Testers Training Course (May).....	12

SUMMARY OF STUDENT ENROLLMENT—Continued

Dairy Technology Conference.....	244
Design and Control of Concrete Mixtures.....	79
F.F.A. Judging Contest and Convention.....	257
F.F.A. Officers Leadership Conference.....	82
Farmers' Home Administration Field Agents.....	30
Fertilizer Conference	92
Fifteenth Annual Short Course for Firemen.....	222
Flock Selecting Agents School.....	75
Florist Short Course.....	110
Four-H Club Leaders (July).....	80
Four-H Club Leaders Training Conference (Jan.).....	80
Future Farmers of America.....	225
Maryland Agricultural Conference	100
Maryland Congress of Parents and Teachers.....	218
Maryland Nurserymen's Association	95
Maryland State Grange Leaders School.....	210
Maryland State Junior Chamber of Commerce Leadership Conference	43
Maryland Y.M.C.A. Pre-Legislative Conference.....	175
Modern Techniques of Merchandising Fresh Fruits and Vegetables (Oct.-Nov.)	41
Modern Techniques of Merchandising Fresh Fruits and Vegetables (Feb.-Mar.)	35
Modern Techniques of Merchandising Fresh Fruits and Vegetables (Mar.-May)	36
Motor Vehicle Fleet Supervisors.....	29
Northeast Farm Game Conference.....	154
Office Management Institute	73
Prince George's Pomona Grange.....	42
Rural Women's Short Course.....	977
School Lunch Workshop.....	38
Seminar in School Buildings.....	150
Southern States Management Conference.....	150
State Four-H Club Week.....	1,132
Summer Conference of Teachers of Vocational Agriculture.....	50
Trainers Clinic	200
Water and Sewage Treatment Plant Operators.....	99
Total Short Courses and Conferences.....	5,966
GRAND TOTAL, All Courses, Baltimore and College Park, less duplications	23,977

UNIVERSITY OF MARYLAND'S CATALOGS

At College Park

Individual catalogs of colleges and schools of the University of Maryland at College Park may be obtained by addressing the Director of Admissions, University of Maryland, College Park, Maryland. These colleges and schools are:

1. College of Agriculture
2. College of Arts and Sciences
3. College of Business and Public Administration
4. College of Education
5. College of Engineering
6. College of Home Economics
7. College of Military Science, Physical Education and Recreation
8. College of Special and Continuation Studies
9. Summer School
10. Graduate School
11. The Combined Catalog (a charge of 50 cents is made for this publication)

At Baltimore

Individual catalogs for the professional schools of the University of Maryland may be obtained by addressing the Deans of the respective schools at the University of Maryland, Lombard and Greene Streets, Baltimore 1, Maryland. These professional schools are:

- (1) School of Dentistry
- (2) School of Law
- (3) School of Medicine
- (4) School of Pharmacy
- (5) School of Nursing

