



**Central Piedmont  
Community College  
General Catalog  
1972-1974**



All general inquiries should be made to the Office of Student Services

**NOTE:** Not all of the courses listed are offered every quarter.

When will your courses be offered?

Contact—Registrar's Office  
Central Piedmont  
Community College



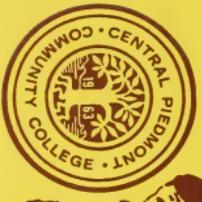
Every two years "CENTIPEDE" publishes a few thousand copies of this General Catalog for its faculty, area high schools, and other colleges. Tens of thousands of the different colored curriculum guides and the information section comprising the Catalog are also printed. Prospective students receive an information section and the curriculum guides of specified interest.

What do you think of such a distribution technique? How do you react to the colors? — different color for each area? What about the drawings? How about clarity? Everything pertaining to the course listing on one page? Any improvements?

Your comments and suggestions about the Catalog are welcomed.

Write: Catalog Office  
Central Piedmont  
Community College

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A HANDY  
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# General Catalog

Volume VI

July 1972

Announcements for 1972-1974



## CENTRAL PIEDMONT COMMUNITY COLLEGE



P. O. Box 4009

Charlotte, North Carolina 28204

Member of  
The American Association of Junior Colleges  
The North Carolina Association of Junior Colleges  
The Southern Association of Colleges and Schools  
The League for Innovation in the Community College

# Contents

## College Organization

Board of Trustees .....	4
Administration .....	5

## General Information ..... 7

### I. The College

Philosophy and Objectives .....	8
History .....	9
Location .....	9
Instructional Facilities .....	10
Building Program .....	11
Accreditation .....	11

### II. Academic Information

Programs of Instruction .....	12
Admission Requirements .....	14
Admission Procedures .....	14
Registration .....	15
Late Registration .....	15
Class Attendance .....	15
Withdrawal from Class .....	16
Course Load .....	16
Grading System .....	16
Graduation .....	17

### III. Financial Information

Tuition and Fees .....	18
Residence Status .....	18
Refund Policy .....	19
Calendar .....	20

### IV. Student Services

Counseling .....	21
Student Activities .....	21
Student Publications .....	22
Student Organizations .....	22
Social and Cultural Events .....	22
Financial Aid .....	22
Scholarships .....	23
Placement Service .....	29
Bookstore .....	29
Parking .....	29
Lost and Found .....	29
Housing .....	29
Foreign Students .....	29
Student Conduct .....	30

### The Continuing Education Program

Adult Education and Community Services.....	32
Contractual Programs .....	36
Occupational Extension Courses .....	34

The Associate in Applied Science Degree Program

Accounting .....	39
Advertising Design Option .....	43
Architectural Technology .....	73
Associate Degree Nursing .....	55
Business Administration .....	59
Chemical Technology .....	71
Civil Engineering Technology .....	73
Commercial Art .....	43
Dental Hygiene .....	91
Drafting and Design Option .....	80
Electrical Engineering Technology .....	76
Electromechanical Engineering Technology .....	78
Electronic Data Processing: Business .....	95
Electronics Engineering Option .....	76
Executive Secretary .....	99
Fire Science Technology .....	111
Human Services Associate .....	115
Interior Design Option .....	43
Legal Secretary .....	101
Manufacturing Engineering Option .....	80
Mechanical Engineering Technology .....	80
Medical Secretary .....	103
Physical Therapy Assisting .....	119
Police Science and Criminology .....	123
Secretarial Science .....	99
Television and Visual Graphics Option .....	43
Visual Merchandising Option .....	43

The Associate in Arts Degree Program

Description of the Program .....	127
General Information .....	127
Requirements for Degree .....	128
Sample Curricula .....	129
Course Descriptions .....	131

The Trade and Vocational Program

Air Conditioning and Refrigeration .....	155
Air Conditioning and Refrigeration Technology .....	159
Automotive Body Repair .....	167
Automotive Mechanics Option .....	171
Clerk-Typist .....	179
Computer Operator .....	183
Construction Equipment Mechanics Option .....	171
Dental Assisting .....	187
Early Childhood Aide .....	118
Machinist .....	191
Medical Office Assisting .....	195
Nurse Aide .....	197
Practical Nursing .....	199
Truck Mechanics Option .....	171
Vehicle Maintenance .....	171
Welding .....	203

## College Organization

### Board Of Trustees

Edgar A. Terrell, Jr., Chairman  
Emil J. Kratt, Vice Chairman  
Dr. Richard H. Hagemeyer, Secretary

### Appointed by The Governor

	Expiration of Term
Mrs. Henry E. Fisher	June 30, 1973
Alan T. Dickson	June 30, 1979
John R. Milliken	June 30, 1975
Charles R. Smith	June 30, 1977

### Appointed by The Mecklenburg County Board of Commissioners

	Expiration of Term
W. Frank Dowd, Jr.	June 30, 1975
J. Emmett Sebrell	June 30, 1979
J. D. Sloan	June 30, 1973
Robert L. Taylor	June 30, 1977

### Appointed by The Charlotte-Mecklenburg Board of Education

	Expiration of Term
Dr. E. L. Rann	June 30, 1975
Emil J. Kratt	June 30, 1977
Dr. William C. Self	June 30, 1973
Edgar A. Terrell, Jr.	June 30, 1979



## Administration

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President

**N. Gayle Simmons,**  
Executive Vice President

**E. Worth Campbell, Jr.,**  
Vice President, Learning Resources

**Donald Lee Harbert,**  
Vice President, Career Programs

**James A. Kiser, Jr.,**  
Vice President, Student Services

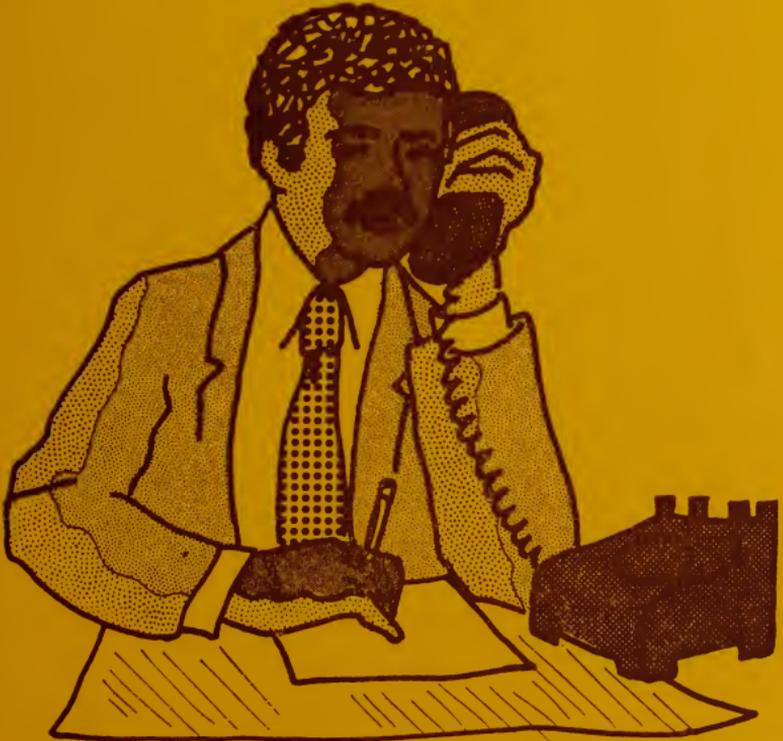
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**William A. McIntosh,**  
Vice President, Educational Planning and Evaluation

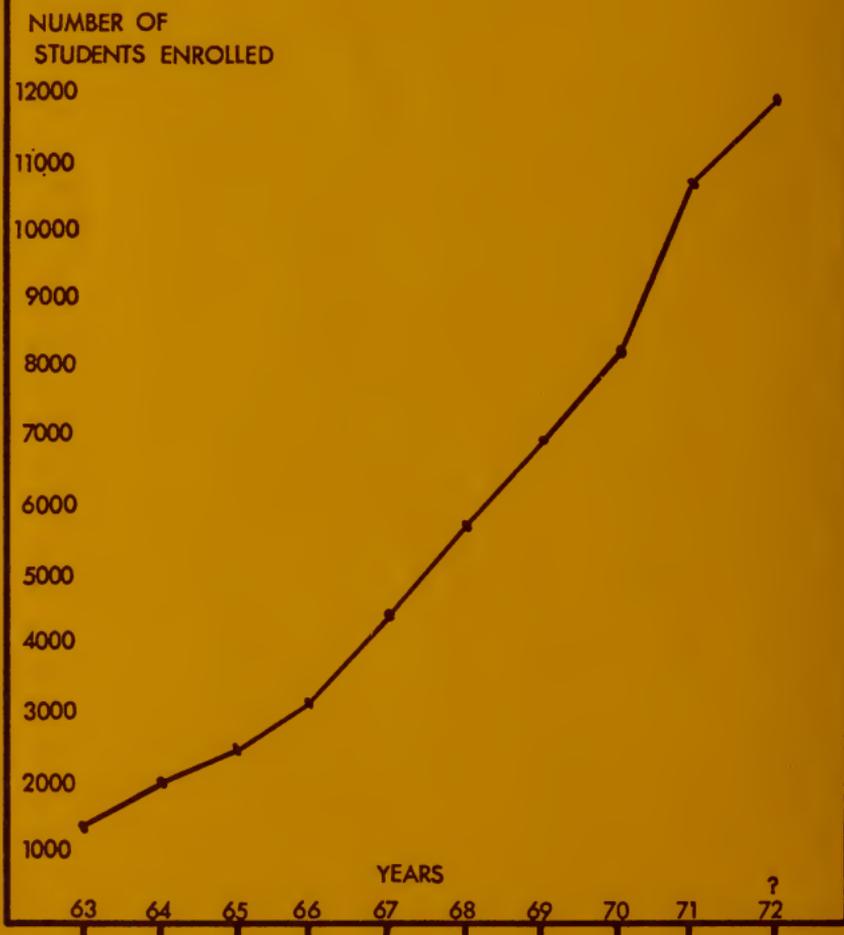
**Vaud A. Travis, Jr.,**  
Vice President, Transfer and Business Programs

**Robert Gilman Hoelzel,**  
Comptroller

**J. C. Robertson,**  
Manager, Plant Operations and Purchasing



GRAPHIC HISTORY OF ON-CAMPUS  
FALL QUARTER ENROLLMENT



## General Information



## Central Piedmont Community College

Post Office Box 4009

Charlotte, North Carolina 28204

### Street Address

Elizabeth Avenue at North Kings Drive  
Charlotte, North Carolina

### Office Hours

Administrative Offices are open from 8:00 A.M. to 5:00 P.M.  
Monday through Friday

The Office of Student Services is open from 8:00 A.M. to 10:30 P.M.,  
Monday through Thursday, from 8:00 A.M. to 6:00 P.M. on  
Friday and from 8:00 A.M. to 12:00 Noon on Saturday.

The College telephone number is 372-2590.

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The College reserves the privilege of changing, without notice,  
any information in this catalog.

# I. The College

## Philosophy and Objectives

The doors of Central Piedmont Community College are open and accessible to all adults seeking to further their education. The College recognizes its responsibility to the community by providing general services to the surrounding area; by helping each student recognize his potential as a worthwhile and productive member of society; by providing opportunities for each student to develop his physical, intellectual, and esthetic capacities according to his desire to pursue an education; and by assisting each student to attain goals consistent with his needs, interests, and abilities.

The College seeks to implement its philosophy by:

- (1) Providing the first two years of work in the liberal arts and pre-professional fields for those students who wish to transfer to four-year colleges.
- (2) Providing occupationally-oriented curricula for those students who wish to enter employment as manufacturing and engineering technicians.
- (3) Providing occupationally-oriented curricula for those students who wish to be employed in business and commerce.
- (4) Providing occupationally-oriented curricula for those students who wish to enter employment in health-related fields.
- (5) Providing occupationally-oriented curricula for those students who wish to enter employment in public service areas.
- (6) Providing occupationally-oriented curricula for those students who wish to enter employment in the skilled trades.
- (7) Providing a program of general education for the social, cultural and personal development of those individuals wishing to continue their education beyond high school.
- (8) Providing single or combination courses needed by adults in the community to update their occupational capabilities to meet the challenges of a changing technological society.
- (9) Providing courses for those individuals whose education stopped short of high school graduation and for those who wish instruction in home and family education and leisure time activities.
- (10) Providing counseling and guidance services to all students.
- (11) Providing community educational services for organizations and individuals—including speakers, concerts, resource personnel or materials, special institutes or programs and reading lists as requested.



The College is aware that the implementation of these objectives in an open door admission environment will bring to its campus students who differ greatly in age, motivation, purpose and educational and personal background. The challenge of educating these students cannot be met with traditional methods of instruction alone. In recognition of this, the following policy statement has been adopted by the Trustees of the College:

“Central Piedmont Community College is committed to the concept that, given enough time, most students can accomplish any learning task. This is based on the concept that students basically differ in their rates of learning rather than their ability to learn.

This commitment carries with it a resolve that the College must have as a major objective the provision of ample opportunities for students to learn at varying rates. It also implies a belief in the concept of individualized control of the rate of learning.”

The Trustees and staff of the College are dedicated to the task of creating the environment for learning which is defined in the above statements of philosophy, objectives and policy.

### **History**

In 1963 the North Carolina General Assembly authorized a system of comprehensive community colleges to be established throughout the state in areas of documented need. Central Piedmont Community College was established as a part of this state-wide system in July 1963. The first programs offered by the College involved curricula in career education. The first liberal arts curricula for college transfer were offered in September 1964. Full accreditation was received from the Southern Association of Colleges and Schools in 1969.

Because of its emphasis on individualized instruction and the large number in innovative programs created by its faculty members, Central Piedmont Community College was invited and in 1969 became a member of the “League for Innovation in the Community College,” an organization of 16 of the leading community colleges in the United States. These pioneering institutions continuously exchange information or projects, techniques and new materials.

The College has grown from its initial on-campus enrollment of nearly 2000 in September 1963 to a September 1971 enrollment of almost 11,000 students. Recognition of this growth, coupled with an awareness of the prospect for continued development, led the voters of Mecklenburg County to approve in January 1966 a bond issue of \$3 million to assist in financing the first phase of a master plan for campus development. This phase, which included purchases of land, construction of new buildings and renovation of existing buildings, was completed in December 1969. Funds for the second phase were approved by the voters of Mecklenburg County in May 1970 and two projects made possible by this bond issue, a new classroom building and an addition to the Counseling Center-Administration Building, are expected to be ready in the fall of 1972.

### **Location**

The campus, situated at Elizabeth Avenue and Kings Drive in downtown Charlotte, is ideally located near the center of the population which it serves and is convenient to public transportation and expressway systems serving the greater Charlotte area.

## **Instructional Facilities**

The institution is supported by state, federal and local funds and thus is able to provide superior instruction and optimum use of excellent equipment and laboratories at a minimum cost to the student. Present facilities include the following:

### **Campus and Building**

The campus includes parking areas and a learning resources center, classrooms and well-equipped, modern laboratories and specialized shop areas.

### **Learning Resources Center**

The heart of instruction on the campus is the Learning Resources Center. In it are tapes, slides, films, programmed materials, an information retrieval system and the traditional books. New audio and visual materials and equipment are added when appropriate to provide a wide range of information to students and faculty.

The Advancement Studies Program, which is housed on the first floor of the Learning Resources Center, provides development programs for students whose educational backgrounds have not prepared them for the curricula they have chosen, supplementary programs that are coordinated with many of the regular college classes and a variety of other programs for those who wish to broaden their knowledge. Resources of the Advanced Studies Program include programmed texts, conventional texts, films, tapes, and slides.

The Library, which is housed on the second and third floors of the Learning Resources Center, has a book collection particularly adapted to the objectives and curriculum of the College, with new titles being added continually. Total resources of the Library include valuable reference books, bound and unbound periodicals, pamphlets, and audio-visual materials, in addition to the general book collection. Microfilm and microfiche readers, copying machines, and dial-access equipment are included in services provided by the Library. An open shelf arrangement is used to stimulate interest and to provide easy access to the collection. There are frequent displays on subjects of general and special interest. Resources of other academic libraries in the Charlotte area and statewide are available to faculty and students through inter-library loans and copying facilities. The Library is staffed by trained librarians, aided by clerical personnel and student assistants. Students are urged to become familiar with the regulations which have been established for the interest of all who use the Library. These procedures appear in the Student Handbook and in other materials distributed at the circulation desk of the Library.

Also located in the Learning Resources Center is the dial access information retrieval system. This system is capable of making a wide variety of audio and visual materials immediately available to individuals or groups. Program sources can include not only material previously recorded on film or tape but also live programs originating in one area of the campus and being received in another.

The Learning Resources Center also includes an auditorium which can be divided into three teaching auditoriums and contains facilities for drama and music.

### **Studios, Laboratories And Shops**

Ample opportunity for students to make practical application of their classwork is an inherent part of many programs offered at the College. The campus complex contains numerous laboratories, shops and specialized instructional areas. Each of these areas is furnished with the best equipment available.

### **Building Program**

The College has developed a Master Plan of campus development which is designed to meet its present and future needs. Included in the first phase of this plan were the acquisition of additional property and construction on this property of a new classroom building, the Counseling Center-Administration Building and Learning Resources Center. This first phase of the Master Plan has been completed and the second phase is now under way. Additions to the Counseling Center-Administration Building and the new classroom building should be completed by the fall of 1972. And, hopefully, construction of a career education building will begin in the summer of 1972.

### **Accreditation**

Central Piedmont Community College is approved by the North Carolina State Board of Education. It is a member of the American Association of Junior Colleges, the North Carolina Association of Junior Colleges, and is an accredited member of the Southern Association of Colleges and Schools.



## II. Academic Information

### Programs Of Instruction

The College offers a wide variety of learning opportunities to all who seek instruction or training. These opportunities for learning are organized into six general instructional programs.

**1. The Diploma Program:** This program offers curricula designed to meet the ever-increasing need of our complex society for skilled craftsmen. A graduate from a diploma curriculum should enter employment with a high degree of manipulative skill. The graduate also gains knowledge of basic mathematics, science and communication. The following curricula are available: Automotive Body Repair, Dental Assisting, Air Conditioning and Refrigeration, Automotive Body Repair, Early Childhood Aide, Machinist, Medical Office Assisting, Nurses Aide, Practical Nursing, Welding, Vehicle Maintenance (options: Automotive Mechanics, Truck Mechanics, Construction Equipment Mechanics), Clerk-Typist, Computer Operator.

**2. The Associate In Arts Degree Program:** The purpose of this program is to provide curricula in the liberal arts and the pre-professional areas which will enable the student to enter as a junior at the four-year institution of his choice. While the liberal arts curricula suggested in Part Five of this catalog will satisfy the requirements of most senior institutions, it is the student's responsibility to identify as early as possible the institution to which he will transfer and to ascertain the specific requirements of that institution for the freshman and sophomore years. Each student's curriculum should be planned by the student and a counselor or faculty adviser with a specific four-year institution in mind.

**3. The Associate In Applied Science Degree Program:** This program offers business curricula, health-related curricula, public service curricula and curricula in engineering technologies. These curricula are designed to enable the graduate to enter an occupation with a marketable skill, a high level of competency and the ability to communicate intelligently. The curricula provide not only highly specialized courses to develop technical skill but also general education courses to enable the student to be an effective member of society. The following curricula are included in this program: Accounting, Business Administration (options: Business Management, Sales and Marketing, Real Estate, Transportation Management), Air Conditioning and Refrigeration Technology, Chemical Technology, Commercial Art (options: Advertising Design, Television and Visual Graphics, Interior Design, Visual Merchandising), Civil Engineering-Architectural Technology (options: Civil Engineering Technology, Architectural Technology), Dental Hygiene, Electromechanical Engineering Technology, Electronic Data Processing, Mechanical Engineering Technology (options: Drafting and Design Technology, Manufacturing Technology), Electrical-Electronics Engineering Technology (options: Electrical Engineering Technology, Electronics Engineering Technology), Associate Degree Nursing, Secretarial (options: Executive, Legal, Medical), Police Science and Criminology, Human Services Associate, Physical Therapy Assisting.

In addition, the College in cooperation with Rowan Technical Institute offers training leading to a degree in Fire Science Technology. Classes are scheduled so that persons who are employed as firemen can take them during off-duty time at night. Several A.A.S. Degree programs provide a foundation for transfer to a four-year institution offering Bachelor of Science Degrees in occupational programs.

**4. The Associate In General Education Degree Program:** The degree of Associate in General Education is designed for persons who want two years of college work for its own sake. These persons are not interested in any career-oriented curriculum in its entirety and they do not intend to transfer to another college.

Candidates for this degree may present credit courses taken in the Associate in Arts Program, The Associate in Applied Science Program, diploma programs, courses in the Extension Division or any combination of these. The A.G.E. student may enroll in any program for any course for which he can meet prerequisites.

To graduate with the A.G.E. degree, candidates must take a total of 96 hours of which a minimum of 32 hours have not been credited toward a previously earned degree or diploma.

A counselor in Student Services assists the student in planning his program and the Vice-President for Student Services approves work taken for completion of the degree.

**5. The Continuing Education Program:** The Continuing Education Program strives to meet the needs of the adult out-of-school population of the area by:

Providing general education opportunities to those who desire pre-high school courses, high school completion courses, cultural and enrichment courses, and hobby or general interest courses.

Providing extension courses to those who desire vocational training, retraining or upgrading.

No college credit is granted for these courses; however, a certificate is awarded upon completion of many of them. Most, but not all, of these classes meet off-campus to fill a specific need at a specific time. Almost any educational need of the community not being met by a regular curriculum class can be met by the Continuing Education Program. Information about courses now being offered may be obtained from the office of Student Services.

**6. Advancement Studies:** Advancement Studies as a part of Learning Resources is a service program to all curricula. The program offers courses in mathematics, reading, chemistry, grammar and writing for any student who wishes to develop skills in any of these areas. All Advancement Studies courses are designed so that a student may begin at whatever level he is currently achieving and advance as rapidly as he chooses to whatever objective he sets for himself.

Special services include English for foreign students, referrals from other instructors based on student needs and special programs for other departments.

## **Admission Requirements**

Central Piedmont Community College, following an "open door" policy, does not impose restrictive standards for admission to the College. Admission to the College, however, does not necessarily imply immediate admission to the curriculum desired by the student. Before the student is admitted to any curriculum, in most cases, a series of placement tests is scheduled and a counseling interview is arranged. This process aids the student in evaluating his potential for success in the curriculum of his choice. When scores on tests and other evidence indicate that a person is not ready academically or committed to a particular program, the individual will be assisted in analyzing his own feelings regarding his potential for success, correcting academic deficiencies, and setting career objectives.

All degree curricula and health career diploma programs require high school graduation or the equivalent. The high school graduation requirement is considered to have been met by graduation from high school, possession of a State High School Equivalency Certificate or possession of an Adult High School Diploma.

Admission to a diploma curriculum is permitted upon demonstration of an aptitude for the particular curriculum as determined by tests, counseling interviews and personal interest.

Requirements for admission to the various Adult Continuing Education courses depend on the course involved. Specific information may be obtained about particular courses by contacting the Office of Student Services.

Central Piedmont Community College will accept credits from other colleges, technical institutes and industrial education centers. Only courses applicable to the desired program at Central Piedmont Community College in which grades of "C" or better have been made will be accepted for credit. The Office of Student Services will evaluate the transcript and determine the courses which are transferrable.

## **Admission Procedures**

Applicants wishing to enroll in any curriculum offered by the College should:

1. Obtain an application from the Office of Student Services.
2. Submit the properly completed application to the Office of Student Services. Applicants should register with the Social Security Administration before presenting applications.
3. Request that a transcript of all high school, pre-college and college work be sent directly to the Office of Student Services.
4. Take an appropriate pre-enrollment test battery if deemed necessary by the Office of Student Services.
5. Have an interview with a counselor and/or departmental adviser during which the applicant's test scores and previous scholastic records will be evaluated and interests and feelings about success will be appraised. The applicant, also, will be advised regarding eligibility to enroll in the desired curriculum. A first quarter schedule will be suggested.
6. Register for the suggested schedule during the registration periods.

While most new students will be seeking enrollment in a curriculum and should follow the steps listed above, the College recognizes that many adults in the community will wish to register for one or more courses as special credit students. In order to encourage this type of interest the College will allow a qualified person to be admitted to the College and enroll for courses without taking a pre-enrollment test battery provided the person does not wish to enter a degree or diploma curriculum.

Admission procedures for courses offered in the Adult Continuing Education Program are announced where appropriate.

### Registration

The College year consists of four quarters. Students who are pursuing a curriculum must register each quarter as they progress toward their educational objectives. Students are encouraged to register as early as possible to avoid the inevitable delays of late registration and to increase the probability of obtaining the schedule of classes which best meets their needs.

### Late Registration

All registration is closed for a class after it has met once. A student may register late prior to the first meeting of class(es) for which he is registering, providing

1. The class is not cancelled or closed;
2. The student pays \$5.00 late registration fee in full at time of late registration;
3. The student was pre-advised or otherwise fully admissible to the courses for which he registers.

### Class Attendance

Absences are a serious deterrent to good scholarship; it is impossible to receive instruction, obtain knowledge or gain skill when absent. As all students are adults with many responsibilities, an occasional absence from class might be absolutely necessary; however, such absences in no way lessen the student's responsibility for meeting the requirements of the class. There is always a direct relationship between the number of class absences and the final grade. It is the student's re-



sponsibility to contact the instructor for any missed assignments. Explanation for missing a class will not be demanded, but as a matter of courtesy, the reason for an absence should be given to the instructor.

### Withdrawal from Classes

A student who for any reason cannot complete a course may officially withdraw through the office of Student Services. This withdrawal must take place prior to the last week of the quarter.

### Course Load

A degree or diploma student who is registered for the equivalent of at least twelve quarter hours of credit is considered a full-time student. Students in College Transfer and business programs normally may take a maximum of 18 credit hours each quarter. Students desiring to take in excess of 18 credit hours must obtain special permission from the curriculum Vice-President or his representative.

### Grading System

#### Letter Grades

The following letter grades are used at Central Piedmont Community College:

- A:** The student has met the maximum obtainable objectives established for the course as set up by the instructor and the department or departments involved.
- B:** The student has met objectives for above standard course work as set up by the instructor and the department or departments involved.
- C:** The student has met the minimum objectives of the course as set up by the instructor and the department or departments involved.
- I:** The student has not met (for whatever reasons) the minimum objectives of the course as set up by the instructor and the department or departments involved.  
Removal of the I may be accomplished by the completion of the remaining objectives in a manner decided upon by the student, the instructor, and the department or departments involved.  
I will not count as hours attempted.
- S:** Credit by examination.
- W:** Official Withdrawal



### **Credit By Examination**

Upon petition from a student, credit by examination may be given. If circumstantial evidence indicates the probability of special aptitude or knowledge on the part of the petitioner, an examination will be developed and administered by the instructor of the course, subject to the approval of the department head and Vice-President. Prior to the administration of the test, the student will be interviewed by the instructor or department head to determine the student's eligibility for the test. If the student achieves a satisfactory score on the test, he will receive a grade of "S". The "S" grade carries no quality points, but credit hours will be given identical to the number of credit hours normally assigned to said course at Central Piedmont Community College.

### **Course Waiver**

A student may be permitted to waive a course which is ordinarily required if he obtains the approval of the curriculum department head and Vice-President, as well as the Vice-President of Student Services. No credit hours shall be granted. No substitute course is required unless failure to do so would place the student's total hours below that required for graduation.

### **Course Substitution**

Course substitutions are permitted upon the recommendation of the curriculum department head and with the approval of the Vice-President of the student's curriculum and Vice-President of Student Services. In many instances, concurrence of the head of the department offering the substituting course is advisable.

### **Quality Point Average**

A student's quality point average is the equivalent of his numerical average for all course work attempted. As the student progresses toward graduation and/or transfer, his quality point average of 2.0 is equivalent to an average grade of "C" on all courses attempted. The student should refer to the Student Handbook for instructions pertaining to the calculation of his quality point average.

### **Graduation**

Graduation exercises are held each year. Central Piedmont Community College awards three degrees: the Associate in Arts Degree upon completion of two-year curriculum of liberal arts course; the Associate in Applied Science Degree upon completion of two-year curriculum of study designed to prepare the student for a career; and the Associate in General Education Degree upon completion of any combination of courses carrying a total of 96 hours of credit. A diploma is granted upon completion of a program of vocational career study. Degrees and diplomas are conferred only during the graduation exercises. The requirements for a degree are as follows:

1. Completion of a minimum of 96 hours in an approved liberal arts curriculum, 96 hours of general education, or the specified requirements in a career education curriculum.
2. A minimum of 32 quarter hours earned in residence at Central Piedmont Community College, 16 of which must be the final credit hours earned prior to graduation.
3. A cumulative quality point average of 2.0.

To receive a degree or diploma and participate in graduation, a student must submit a notification of intent to graduate by July 15 of the year of graduation.

## **Student Records and Transcripts**

The College maintains the position that a student's record is his own property; therefore, this information is released only when the student presents a signed request to the Registrar. A student may have copies of his transcript sent to any institution or individual he chooses. He may also secure copies for his own use. The first two copies are free. After that, \$1.00 per copy is charged.

## **III. Financial Information**

### **Tuition And Fees**

Since the College receives financial support through local, state and federal sources, tuition is very low. Tuition charges are set by the North Carolina State Board of Education and are subject to change without notice. For in-state students registered for credit courses, tuition and fees are as follows:

#### **Fees**

Student Publication and Activity Fee—\$.75 per quarter.

#### **Tuition**

##### **Associate in Arts Curricula**

Students enrolled for 14 quarter hours or more—\$42.00 per quarter

Students enrolled for fewer than 14 quarter hours—\$3.00 per quarter hour

##### **Associate in Applied Science, Associate in General Education and Diploma Curricula**

Students enrolled for 13 quarter hours or more—\$32.00 per quarter

Students enrolled for fewer than 13 quarter hours—\$2.50 per quarter hour

Tuition charged for non-credit classes in the Continuing Education Program depends on the nature of the class. Basic adult education classes and adult high school completion classes have no tuition. Instructional materials fees for certain classes are set to meet the specific need for the particular type of class or seminar being conducted.

The student publication and activity fee and a minimum tuition payment must be made at registration as follows:

1 course—\$3.75      2 courses—\$7.50      3 or more courses—\$15.00

Out-of-state students will pay tuition each quarter as described below:

##### **Academic year 1971-72:**

Students enrolled in 12 quarter hours or more—\$100 per quarter

Students enrolled in fewer than 12 quarter hours—\$8.50 per quarter hour.

##### **Academic year 1972-73:**

Students enrolled in 12 quarter hours or more—\$137.50 per quarter

Students enrolled in fewer than 12 quarter hours—\$11.45 per quarter hour.

### **Residence Status**

A legal resident of North Carolina is one who has his domicile in this state. It is important that each applicant for admission and each enrolled student know his residence status for tuition payment and understand the regulations governing residence status. The following regulations cover most factual situations.

1. A person eighteen years of age or older is not deemed eligible for

the lower tuition rate unless he has maintained his legal residence in North Carolina for at least the twelve months next preceding the date of his first enrollment in an institution of higher education in this state.

2. The legal residence of a person under eighteen years of age at the time of his first enrollment in an institution of higher education in this state is that of his parents, surviving parent or legal guardian. In cases where parents are divorced or legally separated the legal residence of the father will control unless custody of the minor has been awarded by court order to the mother or to a legal guardian other than a parent. No claim of residence in North Carolina based upon residence of a guardian in North Carolina will be considered if either parent is still living unless the action of the court appointing the guardian antedates the student's first enrollment in a North Carolina institution of higher education by at least twelve months.

3. The residence status of any student is determined as of the time of his first enrollment in an institution of higher education in North Carolina and may not thereafter be changed except: (a) in the case of a nonresident minor student at the time of his first enrollment whose parents have subsequently established legal residence in North Carolina; and (b) in the case of a resident who abandons his legal residence in North Carolina. In either case, the appropriate tuition rate will become effective at the beginning of the semester or term next following the date of change of residence status.

4. The legal residence of a wife follows that of her husband, except that a woman student currently enrolled in this institution as a resident may continue as a resident even though she marry a nonresident.

5. Military personnel attached to military post or reservations in North Carolina are not considered eligible for the lower tuition rate unless they have maintained a legal residence in the state for at least the twelve months next preceding the date of first enrollment in an institution of higher education in this state.

6. Aliens lawfully admitted to the United States for permanent residence who have established a legal residence in North Carolina according to above paragraphs numbered 1, 2 or 4 are eligible for the lower tuition rate.

7. Ownership of property in or payment of taxes to the state of North Carolina apart from legal residence will not qualify one for the lower tuition rate.

Any student or prospective student in doubt concerning his residence status must bear the responsibility for securing a ruling by stating his case in writing to the Office of the Registrar.

### **Refund Policy**

Two-thirds of the tuition paid by a student will be refunded if the student withdraws from the College within ten calendar days after the first day of classes as published in the College calendar. If a student voluntarily withdraws from a class while remaining enrolled in College, he will receive no refund for courses dropped. If a class is cancelled by the College, that portion of a student's tuition which was paid for the cancelled class will be refunded in full. Changes permitted by the Office of Student Services during the registration period are adjusted in full.

The activity-publication fee is not refundable. Tuition refunds of \$5.00 or less will not be made except for classes cancelled by the College.

**Calendar 1972****Summer Quarter**

Regular Registration  
Late Registration

Classes Begin  
Labor Day Holiday  
Classes End

**Fall Quarter**

Regular Registration  
Late Registration

Classes Begin  
Thanksgiving Holidays  
Classes End

**Calendar 1973****Winter Quarter**

Regular Registration  
Late Registration

Classes Begin  
Classes End

**Spring Quarter**

Regular Registration  
Late Registration

Classes Begin  
Easter Vacation  
Classes End

**Summer Quarter**

Regular Registration  
Late Registration

Classes Begin  
Labor Day Holiday  
Classes End

**Fall Quarter**

Regular Registration  
Late Registration

Classes Begin  
Thanksgiving Holidays  
Classes End

**Calendar 1974****Winter Quarter**

Regular Registration  
Late Registration

Classes Begin  
Classes End

**Spring Quarter**

Regular Registration  
Late Registration

Classes Begin  
Easter Vacation  
Classes End

**Summer Quarter**

Regular Registration  
Late Registration

Classes Begin  
Labor Day Holiday  
Classes End

**Fall Quarter**

Regular Registration  
Late Registration

Classes Begin  
Classes End

Monday, May 15 to Friday, June 2  
Monday, June 12 to Friday, June 16  
Thursday, July 6—Friday, July 7  
Monday, July 10  
Monday, September 4  
Saturday, September 9

Monday, August 24 to Friday, August 25  
Tuesday, September 5 to Friday, September 8  
Wednesday, September 27—Thursday, September 28  
Monday, October 2  
Thursday, November 23—Friday, November 24  
Tuesday, December 19

Wednesday, November 8 to Friday, December 1, '72  
Monday, December 11 to Friday, December 15, '72  
Wednesday, January 3—Thursday, January 4, '73  
Monday, January 8  
Saturday, March 24

Monday, February 19 to Friday, March 9  
Monday, March 19 to Friday, March 23  
Tuesday, March 27—Wednesday, March 28  
Monday, April 2  
Friday, April 20—Monday, April 23 (inclusive)  
Tuesday, June 19

Thursday, May 17 to Wednesday, June 6  
Thursday, June 14 to Wednesday, June 20  
Thursday, July 5—Friday, July 6  
Monday, July 9  
Monday, September 3  
Saturday, September 8

Monday, August 6 to Friday, August 24  
Tuesday, September 4 to Friday, September 7  
Tuesday, September 25—Wednesday, September 26  
Monday, October 1  
Thursday, November 22—Friday, November 23  
Tuesday, December 18

Thursday, November 8 to Friday, November 30, '73  
Wednesday, December 12 to Tuesday, December 18, '73  
Wednesday, January 2—Thursday, January 3, '74  
Monday, January 7  
Saturday, March 23

Monday, February 18, to Friday, March 8  
Monday, March 18 to Friday, March 22  
Tuesday, March 26—Wednesday, March 27  
Monday, April 1  
Friday, April 12 to Tuesday, April 16 (inclusive)  
Wednesday, June 19

Thursday, May 11 to Wednesday, June 5  
Thursday, June 13 to Wednesday, June 19  
Monday, July 8—Tuesday, July 9  
Thursday, July 11  
Monday, September 2  
Thursday, September 12

Monday, August 12 to Friday, August 30  
Monday, September 9 to Friday, September 13  
Monday, September 30—Tuesday, October 1  
Thursday, October 3  
Saturday, December 21

## IV. Student Services

The College is aware that college life creates new challenges for students. To aid the student in meeting these challenges and to provide opportunities for the maximum development of each student, the College supports a number of services and activities to supplement the academic program. The variety of programs available in Student Services is geared to meet specific needs of the students and community. Moreover, acknowledging that providing opportunities for the development of individual potential is a cooperative endeavor, the Student Services division strives to establish and maintain meaningful relationships among student, faculty, and administration.

### Counseling

Educational, vocational and personal counseling are available to students at C.P.C.C. The Office of Student Services provides admission counseling to help the student decide whether the program for which he has applied is realistic and whether it will satisfy his educational needs and vocational goals. Interest and personality inventories are available to students who wish to use them in planning their programs or increasing their personal awareness.

There are opportunities for students to participate in groups where ideas and opinions regarding social, economic and personal issues are discussed openly. The counseling staff in cooperation with the instructional staff provides opportunities for students in individual classes to become better acquainted on an interpersonal basis.

Counselors are available to provide personal counseling for students who request this service. Counselors also make referrals to appropriate community agencies when a need exists that can be met better by another service agency.

Members of the Student Service staff are available throughout the community on a consultant basis.

The primary objective, therefore, of the counseling program is to facilitate the development of the total person which includes social and personal growth as well as acquisition of academic and occupational skills.

### Student Activities

#### Student Center

The Student Center, located in Old Central provides a large area for students to relax while not attending class.

Coin-operated billiard tables are provided for pool players and educational challenge games may be checked out from the information desk. Card playing is also permitted in this lounge. For those interested in relaxation, comfortable furniture is provided as are tables for studying. WSGA the on-campus radio may be heard in the Student Center. TV is provided in the lobby. Hours are 8:30 a.m. to 9:30 p.m. Monday through Thursday and 8:00 a.m. to 4:00 p.m. Friday.

## **Riegel Building**

A recreational area has been created in the Riegel building where students may play basketball, badminton or table tennis. The hours are posted on college bulletin boards.

## **Central Forum**

The dining facility is operated by a commercial food service company and offers plate lunches and short orders. It is open Monday through Friday 7:00 a.m.-6:00 p.m.

## **Student Government Association**

The Student Government Association, of which every registered CPCC student is a member, consisting of an Executive Council and a Legislative Council. This organization provides students a voice in student affairs as well as an opportunity to engage in the democratic process.

## **Intramural Sports**

Presently, basketball is the major intramural sport on campus. A six team league is operating, and weekly the outstanding players from the league are chosen to represent the school in inter-school competition with area colleges.

## **Student Publications**

**The Prospector** is the College newspaper, published weekly.

**The Student Handbook**, published annually, contains items of information helpful to the student in his life on campus.

## **Student Organizations**

The College encourages participation by students in all areas of campus life and affairs. Student organizations are planned and organized through the Activities Committee of the Student Government Association. Student organizations include special interest clubs, athletic groups, honor societies and professional societies. A complete list of such organizations is included in *The Student Handbook*.

## **Social and Cultural Events**

The College produces and sponsors a number of social and cultural events during the year. Included in these activities are dances, concerts, lectures, and music and drama productions.

## **Financial Aid**

Full time students in need of financial aid can receive assistance from the following sources:

- 1) Scholarships
- 2) Short and Long-term Loans
- 3) The College Work-Study Program
- 4) Educational Opportunity Grants
- 5) Nursing Student Assistance Programs
- 6) Law Enforcement Education Programs

In addition, there are programs of special interest to veterans and disabled persons.

### **How To Apply**

To be considered for financial assistance through Central Piedmont Community College, a student must submit a College financial aid application and a Parents Confidential Statement from the College Scholarship Service. Demonstrated financial need and academic promise are determining factors in awarding financial aid to students whose parents cannot totally finance their higher education. The College Scholarship Service of the College Entrance Examination Board assists colleges in determining and documenting a student's need for assistance. College financial aid applications are available at the office of Student Services. Parents Confidential Statement forms may be obtained from high school guidance counselors or from the office of Student Services at the College. Students submitting PCS forms should designate Central Piedmont Community College as one of the recipients. Applications should be filed as early as possible to allow time for processing.

To students with demonstrated financial need, the College attempts to award assistance best suited to the student's situation and qualifications. All students applying for assistance will be given consideration regardless of race, creed, color, or national origin provided they are citizens of the United States of America.

### **Scholarships**

The total value of a scholarship awarded to a student is payable in amounts prorated to each quarter of the College year. The initial award is made for one quarter; upon evidence of satisfactory performance by the recipient, the award is renewable for a maximum of three succeeding quarters. An award for a second year may be made upon re-application to the Office of Student Services. Students who are now attending a school in the Charlotte-Mecklenburg system should seek the assistance of their counselor in obtaining a scholarship.

#### **Scholarships Available At This Date Are:**

**American Association of Textile Chemists and Colorists Scholarship**  
Deserving student in Chemical Technology.

**American Society For Metals Scholarship**  
Deserving student in Welding or Machinist trades, Drafting and Design or Manufacturing Technology.

**Barnhardt Manufacturing Company Scholarship**  
Deserving student evidencing academic promise.

**Martin Cannon Foundation Scholarship**  
Two scholarships of \$500 each will be awarded to deserving students enrolled in the Associate Degree Nursing curriculum. One scholarship is awarded to a first-year student; the other, to a second-year student.

**Carolina Heritage Chapter Of The American Business Women's Association Scholarship**

A deserving young woman student is assisted with payment of her books and tuition by this scholarship.

**Charlotte Chapter Of National Secretaries Association Scholarship**

This scholarship is awarded to students in the Executive Secretarial curriculum.

**Charlotte Charter Chapter Of The American Business Women's Association Scholarship**

This scholarship assists a deserving young woman student with her educational expenses.

**Charlotte Dental Assistants Society Scholarship**

This scholarship of \$100 is awarded to a Dental Assistant student in need.

**Charlotte Junior Women's Club**

This organization provides assistance to a deserving woman student in the form of directly related educational expenses.

**Charlotte Independent Automotive Wholesalers Scholarship**

The Charlotte Independent Automotive Wholesalers makes this scholarship available to students taking either the Automotive Mechanics or Automotive Body Repair curriculum.

**Dental Hygiene Study Club**

Set of instruments for a deserving Dental Hygiene student.

**Dickson Foundation Scholarship**

The Dickson Foundation makes available a \$750 scholarship to a student enrolled in the Associate Degree Nursing curriculum.



### **Duke Power Company Scholarship**

These funds are awarded to deserving students at the College's discretion.

### **Ruth Moss Easterling Scholarship**

This scholarship of \$150, donated by the Metropolitan Business Professional Women's Club of Charlotte, is awarded annually to a woman student.

### **Health Program Scholarship**

A Charlotte church has made possible several scholarships to be used for students enrolled in the College's health curricula.

**Institute Of Internal Auditors, Piedmont Carolinas Chapter**  
\$150 scholarship award to deserving student in Business Administration or Accounting.

### **Jefferson Standard Foundation Scholarship**

One two-year scholarship of \$200 per year is awarded annually to an outstanding Associate Degree student. This is donated by Jefferson Standard Broadcasting Company.

### **Mr. And Mrs. Emil J. Kratt**

Deserving student in Civil Engineering program.

### **Maintenance Council Of The North Carolina Motor Carriers Association Scholarship**

The Maintenance Council of the North Carolina Carriers Association provides a \$200 scholarship for a student enrolled in Truck Maintenance.

### **Chemical Technology Scholarship Fund**

Deserving Chemical Technology student.

### **Mecklenburg Chapter Of The American Business Women's Association Scholarship**

The Mecklenburg Chapter of the American Business Women's Association assists deserving women students with directly related educational expenses.

### **Metrolina Metalworking Industries Scholarship**

Deserving students enrolled in the Machinist Program who are in need of financial assistance. Covers cost of tuition, books and fees.

### **Mu Epsilon Chapter of Phi Beta Lambda Fraternity Scholarship**

The Mu Epsilon Chapter of the Phi Beta Lambda Fraternity, a Central Piedmont Club for business oriented students, gives one \$150 scholarship annually to an outstanding business student who has completed a minimum of one quarter's study as a full-time student.

### **H. B. Owsley Scholarship**

Deserving students in Construction Equipment Mechanics Program.

### **Patton Foundation Scholarship**

Scholarships are awarded to recipients who evidence financial need and demonstrate the potential for success in their chosen fields of study.

### **Col. J. N. Pease Scholarship**

These scholarships are awarded to students in the areas of Pre-Engineering, Civil Engineering, Manufacturing Engineering, Architecture of Drafting and Design. An award of \$200 is given each recipient.

### **Pelton And Crane Scholarship**

Pelton and Crane Company each year gives two scholarships to students in the Dental Hygiene curriculum and two scholarships to students in the Dental Assisting curriculum.

### **Piedmont Club Foundation Scholarship**

The Piedmont Club Foundation gives assistance to students in severe need of financial aid.

### **Pneumafil Corporation**

These scholarships of \$200 each are awarded to deserving students in need.

### **John A. Polites Scholarship**

These scholarships are awarded by Mr. and Mrs. John A. Polites to deserving orphans or to students in whose homes the mother is the only wage earner and is unable to contribute the necessary money needed to attend Central Piedmont Community College. Each scholarship provides \$60 per quarter toward tuition and books and includes meals at the Athens Restaurant on days the scholarship recipient is on campus.

### **Professional Construction Estimators Association Scholarship**

Deserving student in Engineering field.

### **Quota Club Scholarship**

The Quota Club offers assistance to a deserving woman student.

### **Rankin Scholarship**

Deserving student in Practical Nursing or Associate Degree Nursing Programs.

### **Richmond Dental Cotton Company Scholarship**

These scholarships, donated by the Richmond Dental Cotton Company, Charlotte, are awarded to students enrolled in one of the College's dental curricula. The maximum amount awarded to a student in any one year is \$200.

### **Rodgers Builders Scholarships**

Rodgers Builders scholarships are awarded to deserving students in the Civil Engineering-Architectural Technology Program. The maximum amount awarded to a student in any one year is \$250.

### **Schoenith Foundation Scholarship**

A scholarship of \$929 is given by the Schoenith Foundation to a student in the Associate Degree Nursing curriculum. One-half of this award must be repaid.

### **Terrell Machine Company Scholarship**

The Terrell Machine Company of Charlotte contributes annually two scholarships of \$200 each to be awarded to deserving students in the Manufacturing Engineering Technology, Drafting and Design Technology or Machinist curricula.

### **Winchester Surgical Supply Company**

Deserving students in Health Programs, primarily Medical Office Assistants.



In addition to the listed annual scholarships, many local organizations frequently donate scholarship funds which are awarded at the discretion of the College.

#### **Short-Term Loans**

A revolving loan fund was established in 1964 at Central Piedmont Community College for the benefit of students who need small emergency loans and who state that this is a temporary condition. These loans are made, interest free, for a maximum period of sixty days. The maximum amount available to any one borrower is \$30. Donors to this fund include local businesses, civic organizations and individuals.

#### **Long-Term Loans**

##### **National Defense Student Loan Program**

Central Piedmont Community College is participating in the National Defense Student Loan Program. This program makes funds available to freshmen or sophomores who are taking at least a half-time schedule in one of the Associate Degree Programs. The College share, ten per cent, is being contributed by civic organizations.

The National Defense Student Loan Program makes provisions for students to borrow up to \$1,000 in any one year. Three per cent interest per year is charged on the unpaid balance, beginning nine months after the borrower ceases to pursue a course of study at an institution of higher learning.

##### **The College Foundation, Inc.**

The College Foundation, Inc., Raleigh, North Carolina, administers several loan funds including the Federal Insured Student Loan. Legal residents of North Carolina who are full time students at an institution of higher education may borrow up to \$1500 per year for educational expenses. The Federal Government will pay the 7% interest on the loan while the student is in school and before repayment begins for students whose adjusted family income is below \$15,000. The minimum repayment is \$30.00 per month, and the loan must be repaid within 10 years. Application forms may be obtained from the office of Student Services.

##### **The Prospective Teachers Scholarship Loan Fund**

Prospective teachers may borrow up to \$600 per year for educational expenses through the scholarship loan program, which is administered by the Department of Public Instruction in Raleigh. A student may have up to \$600 of his total loan cancelled for each school year he teaches in a North Carolina school. For complete details regarding the program, interested applicants should contact the Prospective Teachers Scholarship Loan Fund, State Department of Public Instruction, Raleigh, North Carolina. Application forms are also available at the Office of Student Services.

##### **The College Work-Study Program**

One form of financial aid available to needy students to earn money for college expenses consists of employment at the College under the Federal College Work-Study Program. Eighty percent of a student's salary is paid from federal funds, and twenty percent must be matched by local funds.

##### **Educational Opportunity Grants**

The Educational Opportunity Grants Program was established by the Higher Education Act of 1965. It is designed specifically for Associate Degree Students from low income families, with particular attention given to those families whose incomes allow little if any contribution

toward college expenses. The EOG Program is federally funded, and the amount must be totally matched with other aid, such as scholarships, National Defense Loans, or College Work-Study Program earnings.

### **Nursing Student Assistance Program**

The Nursing Student Loan and Nursing Scholarship Programs assist students who need financial assistance to pursue a course of study leading to an associate degree in nursing. The goal is to increase the opportunities for youth seeking careers in nursing by providing scholarships and long-term, low-interest (3%) loans to students who are in need of such assistance. The maximum Nursing Student loan available to an individual borrower in a 12-month year is \$2,000. The maximum Nursing Scholarship which a student may receive is \$1,500. A borrower may cancel a portion or all of the loan as the result of full-time employment as a professional nurse.

### **Law Enforcement Education Programs**

These awards provide a program of student loans and/or grants to state and local public law enforcement personnel and to persons who promise to enter the law enforcement field. Loans may be made up to \$1,800 per academic year. Grants are only available to currently employed law enforcement personnel and may be up to \$200 per quarter, not to exceed the cost of tuition, fees and books.

### **Financial Assistance For Veterans and Other Eligible Persons**

The college provides educational opportunities for veterans, disabled veterans and eligible dependents of deceased or disabled veterans. For additional information regarding these benefits, which are administered by the Veterans Administration, persons should contact one of the following offices: his respective county Veterans Service Office, the District Office of the North Carolina Department of Veterans Affairs, the Office of Student Services or the Veterans Administration, Regional Office, Winston-Salem, N. C. Only veterans are eligible for benefits while completing the Adult High School Diploma.

The College also assists students on North Carolina Veterans Commission Scholarships. Students seeking these scholarships should contact the state office, district office, or the office of student services.

### **Social Security Administration and other Government Agency Benefits Programs**

The college provides advisement and certification services for students who are eligible for Social Security, Railroad Retirement or other governmental agency benefits. Students seeking assistance under these programs should contact the respective agency or the office of Student Services.

### **Educational Rehabilitation Assistance**

The college provides educational opportunities for exceptional persons, e.g., physically handicapped or other disability due to illness or accident. Counseling services are available to students receiving, or who may be eligible to receive, this type of assistance.

Students seeking this assistance should contact the local or district office of the State Department of Vocational Rehabilitation or the Office of Student Services.

The college also provides coordination with handicapped students' public or private social service agencies.

## **Placement Service**

Assistance in obtaining part-time and full-time employment is provided by the Placement Service which is located on the second floor of the Counseling Center-Administration Building. A list of current employment opportunities for off-campus is maintained at all times. A bulletin board displaying current employment opportunities is maintained in the lobby of CAB second floor.

Annual Employment Opportunity Week is held in February at which time local and national companies are invited on campus to interview prospective graduates of that year.

Information concerning these jobs can be obtained from the office of the Placement Officer.

## **Bookstore**

It is the student's responsibility to obtain the required textbooks and supplies prior to the first meeting of a class. The College maintains a bookstore from which the student may purchase the necessary books and supplies. The bookstore will buy used books from students when possible.

## **Parking**

The campus includes paved and well-lighted parking areas. Students may use these parking lots except for those reserved for faculty. Access to student lots is controlled by "free-in pay-out" gates which operate automatically. This type of procedure requires the student to insert a token or ten cents in the appropriate receptacle on leaving a parking lot. The gate will then raise to enable the individual to leave. Tokens may be purchased at the Bookstore in quantities of 20 tokens for one dollar.

As an additional protection to students, their cars must be registered each year at the fall quarter (and whenever a student first registers). He is given a CPCC sticker that is to be affixed to the rear bumper. There is no additional charge for this service.

## **Lost and Found**

The Office of Student Services operates a lost and found service. Any articles found should be turned in to this office. Any student losing an article should also contact this office.

## **Housing**

The College does not provide living accommodations for students; however, a card file listing of available rooms and apartments is maintained in the Office of Student Services. Many of these accommodations are within walking distance of the College or are conveniently located to bus service. Nursing career students who reside outside the city limits of Charlotte may secure rooms at the Charlotte Memorial Hospital Student residence hall. In all cases the student is responsible for making arrangements for housing.

## **Foreign Students**

Any foreign national (non-immigrant status) who is seeking admittance under an F-1 special visa should contact the foreign student advisor in the office of Student Services for admission requirements. The advisor will be glad to assist foreign students on campus in such matters as extension of stay, transfer for additional education, and possible employment.

Foreign nationals on permanent visas (I-151) may enroll in the usual manner. Foreigners on visitors' visas (usually of six-months duration) may enroll as special credit or extension students.



### **Student Conduct**

College students are considered to be mature individuals. Their conduct both in and out of college, is expected to be that of any respectable adult in a public place. Under these circumstances it is expected that the student will at all times remember that he is living in a democratic situation and that the reputation of the institution rests on his shoulders. Common courtesy and cooperation make the above suffice for a long list of rules and regulations. Failure to meet standards of conduct acceptable to the College may result in disciplinary suspension. CPMC guarantees to each student the privilege of exercising the rights of citizenship under the Constitution of the United States. If suspension is considered, a hearing with the Vice-President for Students or his representative is held so that the charges may be carefully described and examined. The student may be represented by legal counsel at this meeting. He may also appeal a decision made at this hearing.

A student who is dismissed must apply to the Vice-President for Student Services before readmission can be approved.

## The Continuing Education Program

The Continuing Education Program of Central Piedmont Community College provides adult education and extension courses for those individuals whose education stopped short of high school graduation, for those who wish instruction in home and family education and leisure time activities and for those who need short-term training, retraining or upgrading in a vocational or professional area.

College credit is not given for completion of courses in the Continuing Education Program; however, a certificate is awarded by the College in some cases. Licenses, diplomas or other forms of recognition are awarded by certain non-College agencies upon successful completion of designated course sequences.

Tuition and fees for courses in the Continuing Education Program depend upon the nature of the course. No tuition or fee is charged for basic adult or adult high school completion courses.

Admission requirements for courses in the Continuing Education Program depend upon the nature of the course. Admission to most of these classes is gained by registering during the regular College registration period; entry into some may be made at any time in the quarter. While some of these classes are conducted on the College campus, most are in adult centers which are located in schools scattered throughout the area or in other locations appropriate to the nature of the course.

Information about a specific course may be obtained from the College. General information about the present types of course offerings may be found in the following section. Other types of non-credit courses may be offered to meet expressed needs of the community when evidence of these needs is presented to the college.



## I. Adult Education and Community Services

Adult education and community service courses are offered for those whose education stopped short of high school graduation and/or for those who wish instruction in home and family, leisure time and cultural activities. The courses are made available to the community through Centers which are located throughout Charlotte-Mecklenburg and Union County. The courses are free.

### Pre-high School Basic Education

The Adult Continuing Education Program of Central Piedmont Community College offers classes in fundamental education to those adults who are between the levels of 1st Grade and 8th Grade. Adults in the Pre-High School classes are divided into three levels:

Level 1. —Grades 1 through 3

Level II. —Grades 4 through 6

Level III.—Grades 7 through 8

Upon completion of the 8th Grade, an adult may then enroll in high school courses to obtain an adult high school diploma. If you have any questions about these courses contact:

Director, Adult Education Center and Community Services  
372-2590, ext. 383

### General Interest Courses

The Adult Education Program offers courses for pastime and pleasure designated general interest. These off-campus courses are offered whenever interest is indicated by fifteen or more persons. Courses which are offered include:

Interior Design	English for Foreign Speaking People
Know Your Automobile (For Women)	Boating Safety
Flower Arranging	Understanding the Computer
Personal Financing	Great Books
Art	Greek Mythology
Hobby Photography	Music Appreciation

### Home and Family Courses

Other classes designed to improve the average family—designated home and family—also are offered whenever interest is indicated by fifteen or more persons. Courses which are available include:

Sewing	Defense Driving
Exercise and Weight Control	First Aid
Quantity Cooking	Personal Typing
Child Care	Personal Budgeting and Financing

### Seminars and Conferences

Seminars and conferences can be organized upon request from special interest groups.

## High School Completion

Adults who have not graduated from high school may earn an adult high school diploma through the High School Completion courses offered by the College. The adult high school diploma is an earned diploma granted by the local Board of Education in cooperation with the College.

An adult who has not met the requirements for high school graduation by having completed four units of English, one unit of mathematics, two units of general science and biology and one unit of American History must enroll for at least one quarter in each subject in which there is a deficiency. At the completion of a quarter and upon recommendation of the teacher a standardized test will be administered by the College.

If a satisfactory level of achievement is indicated by the test score the student will be credited with having completed the subject and will be given credit toward graduation. English and mathematics must be completed first. If no high school credits have been earned, the adult must enroll for at least one quarter in a pre-high school class to demonstrate the possession of a functional eighth grade education.

Upon completion of all requirements, the adult is recommended to the local Board of Education as eligible to receive the Adult High School diploma. The local Board of Education, according to previous agreement with Central Piedmont Community College, then issues the high school diploma.

## Adult Education Centers

Free public education courses for adults over 18 are offered at the following centers. Times and places may change. For up to date information contact:

Director, Adult Education Centers and Community Services  
372-2590, ext. 383

Bethlehem Center, 2705 Baltimore Avenue  
Bruns Avenue, 501 Bruns Avenue  
East Union, Marshville  
First Methodist Church, 501 North Tryon  
First Ward, 617 North Caldwell  
Garinger, 1100 Eastway Drive  
Greek Orthodox Cathedral, 600 East Boulevard  
Huntersville Elementary, Old Statesville Road  
Independence, 1967 Patriot Drive  
Kennedy, 3114 Bank Street  
Laney, Route 4, Monroe  
Monroe, 6006 Lancaster Avenue, Monroe  
Monroe Prison, Monroe  
Myers Park, 2400 Colony Road  
Nevins Center, 3523 Nevins Road  
North Mecklenburg, Statesville Road, Huntersville  
NYC Headquarters, 601 N. Graham Street  
Olympic, Sandy Porter Road  
Plaza Presbyterian Church, 2300 The Plaza  
St. Paul Baptist Church, 1401 North Allen Street  
West Charlotte, 2219 Senior Drive  
West Mecklenburg, 7400 Tuckaseegee Road  
Western Union, Route 2, Waxhaw  
Wilmington Baptist Church, 2669 Wilmington Road  
Windsong, 900 Shadowood Lane

## II. Occupational Extension Courses

Extension courses are offered for those who need short-term training, retraining or upgrading in a vocational or professional area. The descriptions which follow are indicative of the types of courses that are frequently offered; however, any training, retraining or upgrading course can be offered to meet an expressed community need. For information contact: Director, Occupational Extension.

### Supervisory Development Training

Supervisory Development Training Classes train persons interested in becoming supervisors and provide instruction for supervisors at various levels of management as preparation for advancement.

Classes available to supervisory personnel are:

Human Relations

Economics in Business and Industry

Art of Motivating People

Effective Communications

Effective Writing

Effective Speaking

Reading Improvement

Work Measurement

Job Methods

Conference Leadership

Creative Thinking

Industrial Safety and Accident Prevention

Industrial First-Aid

The Supervisor in North Carolina

The Supervisor and Employee Benefits

Job Analysis Training

Cost Accounting for Supervisors



## **Fire Service Training**

The growing Piedmont area of North Carolina requires expansion of fire fighting units and an upgrading of fire service personnel. The need for better trained personnel is met by the College through training provided in the latest techniques.

Fire service training is taken directly to the individual fireman. Training sessions are held in the local fire departments allowing the men to be trained as an organized group utilizing equipment they would ordinarily use in controlling fire.

Fire Service classes include:

- Forcible Entry
- Rope Practices
- Portable Fire Extinguishers
- Ladder Practices
- Salvage and Overhaul Practices
- Fire Apparatus Practices
- Ventilation
- Rescue Practices
- Protective Breathing Equipment
- Firefighting Procedures

These are non-credit courses. The College in cooperation with Rowan Technical Institute also offers an associate degree curriculum in this area.

## **Apprenticeship and Licensure Training**

Many men learn a trade by working on the job where they acquire skills by using the tools of the trade. The College offers opportunities for these men to acquire related instruction in the classroom at night. Several of the trade areas in which related instruction is available are:

- Electrical Code
- Electrical Apprentice
- Sheet-Metal Apprentice
- Plumbing and Steamfitting Apprentice

Course sequences and course descriptions may be obtained from the College.

## **Law Enforcement Training**

A growing need for better trained law enforcement officers is met by the College through opportunities for training. Police Recruit Schools and Police Seminars are conducted several times a year in order to meet these needs. These are non-credit courses. The College also offers an associate degree curriculum in Police Science and Criminology.

## **Miscellaneous Training**

- Banking
- Insurance
- Creative Activities for the Preschool Child
- Blueprint Reading
- Institutional Housekeeping
- Construction Electricity
- FCC Licensing
- Hotel/Motel Management
- Salesmanship
- Sewing & Alterations
- Health Related Courses
- Apartment Resident Manager
- Small Engine Repair

### III. Contractual Programs

The College contracts with various local, state and federal agencies to provide specific training for students selected and referred by the agency.

#### MDTA Courses

Under the provisions of the Manpower Development Training Act (MDTA) persons who are unemployed or underemployed are eligible for certain types of training. In cooperation with the Employment Security Commission of North Carolina, the College offers specialized course work as scheduled by the Commission.

#### WIN Courses

WIN courses, sponsored by the North Carolina Employment Security Commission, provide persons on welfare basic education and vocational education leading to gainful employment.

#### New Careers

The New Careers offers disadvantaged persons with training in a number of human service occupations such as teacher aide, health aide, and recreational aide.

All the Contractual Programs provide counseling services offered by the agency and the College. For further information contact: Director, Contractual Programs.

#### New and Expanding Industry Training

The College offers specialized courses as needed to meet the demands of new and expanding industries in the area for workers requiring specific skills training. For information contact: Vice President, Continuing Education.



## The Advancement Studies Program

The Advancement Studies Program is based on the philosophy that each student has unique educational needs and goals, and that, once identified, these needs and goals can best be accomplished by allowing each student to progress at his own pace in an open, caring atmosphere which is marked by its acceptance of each individual.

Each part of the Advancement Studies program has a stated objective, with a system designed to help each individual accomplish that objective. Through the use of stated objectives, individual modules of instruction, individualized multi-sensory programs, and instructors who coordinate each learning segment with the other learning segments, a student may advance at his own pace from one objective to the next.

At the completion of the terminal objectives of these courses the student will be awarded a grade of **A**, **B**, or **C**. Unless otherwise stated in the specific course outline, a grade of **A** means maximum achievement; a grade of **C** means minimum achievement; a grade of **B** means achievement between the maximum and the minimum.

Credit is granted for accomplishment of terminal objectives. These credits will receive grade points that add to the student's cumulative grade point average the same as other college courses. These credits cannot be substituted for required courses or electives in the student's curriculum. Credits for Advancement Studies may or may not transfer to another institution. Normally the receiving institution would not substitute these credits for required curriculum courses. They would, however, in some cases, substitute them for an elective credit.

The Advancement Studies Program in conjunction with the Office of Student Services also provides counseling services that combine the efforts of counselors with instructors to offer advice and assistance in curriculum choice, occupational outlook and discovering one's own human potential.

### Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically, by the abbreviation or prefix letters.

### Advancement Studies

**ENG 9300 Fundamentals of Grammar:** An individualized, self-paced course designed to facilitate the learning of basic sentence-writing skills. Emphasis is given to sentence patterns, sentence construction, mechanics, grammar and vocabulary. (0—10) 3

**MAT 9303 Health Related Algebra:** An individualized, self-paced course designed specifically to meet the entering algebra requirement for the Dental Hygiene curriculum. Linear equations, signed numbers, literal equations, graphing, and word problems are stressed. (0—10) 3

**CHM 9200 Fundamentals of Chemistry:** An individualized, self-paced course designed specifically to facilitate the learning of basic chemistry which is necessary for entry into the Associate Degree Nursing and Dental Hygiene curriculums. Basic theories of atoms and molecules, chemical equations, electrical charges, and the mathematics involved in temperature conversion and the Metric System are stressed. (0—10) 2

**MAT 9302 Algebra I:** An individualized, self-paced course designed to meet the need of any student who does not have the necessary mathematical background to take college or technical mathematics. This course includes a study of the following: sets of the number system, graphing linear equations, factoring polynomial expressions, and solving equations using the quadratic formula  
(0—10) 3

**ENG 9301 English For Foreign Students:** A laboratory course designed to help the foreign student or new American learn how to communicate in English with emphasis on everyday dialogue, spelling, reading and understanding. Personal involvement in live conversation as well as individual practice on audio equipment is essential.  
(0—5) 3

**MAT 9311 Plane Geometry:** An individualized, self-paced course in plane geometry designed for technical and transfer students who have not had high school geometry. May be taken concurrently with MAT 9310, MAT 1504, MAT 3504 or MAT 1514. P.R. MAT 9302 or placement.  
(0—5) 3

**RDN 9210 Fundamentals of Reading:** A self-paced individualized basic reading skills course designed to offer training in: perceptions, word meaning, word recognition, pronunciation, reading rate and comprehension. Recommended for students who need improvement of basic skills.  
(0—3) 2

**RDN 9211 Development Reading:** A self-paced individualized developmental reading course designed to develop basic reading skills to a higher level of competency. The student is provided a suggested program with options to concentrate on the skills he judges most important to him. Recommended for students who have basic skills but need practice in developing them. (0—3) 2

**RDN 9212 Advanced Reading:** A self-paced individualized speed reading course. Emphasis is given to methods and techniques of increasing rate and comprehension. Students are given options to concentrate on skills in the areas of their interests. Recommended for those who read well, but wish to further develop speed techniques.  
(0—3) 2

**ENG 9310 Fundamentals of Writing:** An individualized, self-paced systems approach designed to facilitate the learning of basic paragraph and theme writing skills. Student selects writing projects relative to his own curriculum. Study of grammar, mechanics and spelling is assigned by individual prescription. The course is also available in audio—Braille materials. P.R. ENG 9300 or placement.  
(0—5) 3

**MAT 9310 Developmental Algebra:** An individualized, self-paced course designed for the students preparing for transfer or technical mathematics. It is assumed that the student has had the equivalent of one year of high school algebra. Can be considered a substitute for a second year high school algebra course. P.R. MAT 9302 or placement.  
(0—5) 3

**MAT 9300 Arithmetic:** An individualized, self-paced course designed to meet the entering math requirement for business, secretarial, and certain trade curricula. Emphasis is given to operations involving whole numbers, fractions, decimals, and percentages.  
(0—10) 3

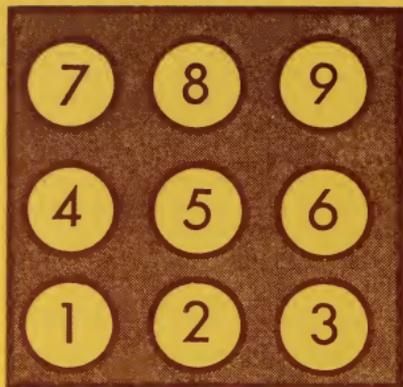
**MAT 9301 Health Related Arithmetic:** An individualized, self-paced course designed specifically to meet the entering math requirement for the Physical Therapy, Associate Degree Nursing and Licensed Practical Nursing curricula. Computations involving whole numbers, fractions, decimals, percentages, ratio and proportion, measurements, the Metric System, Roman Numerals and graphs are taught with an emphasis on word problems which facilitate the application of mathematics to specific needs of the health related vocations.  
(0—10) 3

Accounting is often called the "language of business." It is the language employed to communicate financial information. The accounting profession is important to the complete spectrum of business fields, ranging from governmental to small private businesses. Accountants are found in such forms of business operation as the sole proprietorship, partnership and corporation. Positions are available to accountants in general accounting, auditing, payroll accounting, credit and other specialized fields.

### Description Of Curriculum

The Accounting curriculum is designed to provide sound academic training in the accumulation and maintenance of accounting. The student learns to perform such duties as: maintaining journals and ledgers, preparing financial statements, making special reports and analyses, preparing cost data and summarizing tax information. The degree Associate in Applied Science in Accounting will be awarded upon successful completion of this curriculum. Students interested in transferring to a senior institution should enroll in the mathematics and English options listed in the footnotes.





### Suggested Sequence Of Required Courses For Accounting

	Course Title	Hours per Week		Quarter Credit Hours
		Class	Lab	
<b>First Quarter</b>				
BUS 1400	Introduction to Business	3	2	4
BUS 1604	Principles of Accounting I	5	2	6
ENG 3304	Communications I**	3	0	3
MAT 3304	Business Arithmetic*	3	0	3
	Elective***	3	0	3
		<hr/>	<hr/>	<hr/>
		17	4	19
<b>Second Quarter</b>				
BUS 2304	Business Law I	3	0	3
BUS 1605	Principles of Accounting II	5	2	6
MAT 1300	Business Mathematics*	3	0	3
ENG 3305	Communications II**	3	0	3
		<hr/>	<hr/>	<hr/>
		14	2	15
<b>Third Quarter</b>				
BUS 2305	Business Law II	3	0	3
BUS 2626	Intermediate Accounting I	5	2	6
ECO 2300	Economics I	3	0	3
BUS 3300	Business Machines (or Elective)	2	2	3
ENG 3306	Communications III**	3	0	3
		<hr/>	<hr/>	<hr/>
		16	4	18
<b>Fourth Quarter</b>				
BUS 2627	Intermediate Accounting II	5	2	6
ECO 2301	Economics II (or Elective)	3	0	3
SPH 1300	Oral Communication	3	0	3
BUS 4334	Business Finance I	3	0	3
EDP 3300	Introduction to Computer Concepts	3	0	3
		<hr/>	<hr/>	<hr/>
		17	2	18
<b>Fifth Quarter</b>				
BUS 4335	Business Finance II	3	0	3
BUS 4447	Advanced Accounting	3	2	4
BUS 4434	Income Tax Accounting	3	2	4
ENG 4304	Business Communication	3	0	3
EDP 2306	Computer Programming I (Business) (or Elective)	2	2	3
		<hr/>	<hr/>	<hr/>
		14	6	17
<b>Sixth Quarter</b>				
BUS 4444	Cost Accounting	3	2	4
BUS 4364	Budget and Record Keeping	3	0	3
BUS 4404	Auditing	3	2	4
EDP 4314	Systems and Procedures	3	0	3
PSY 4300	Applied Psychology	3	0	3
		<hr/>	<hr/>	<hr/>
		15	4	17

\*MAT 1504, 1505 or MAT 1514, 1515 may be taken if student has met requirements.

\*\*ENG 1304, 1305, 1306 may be taken if student has met requirements.

\*\*\*BUS 3404 Typing required of students in first quarter if they have not had one year of high school typing.

## Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically, by the abbreviation or prefix letters.

**BUS 1400 Introduction to Business:** A comprehensive introduction to business operations and organization with an analysis of forms of business ownership, business functions and problems of management. (3—2) 4

**BUS 1604 Principles of Accounting I:** A study of basic accounting principles covering the complete accounting cycle for a proprietorship. Accounting for notes, interest, inventories, depreciation and payroll is covered. Preparation of worksheets and financial statements is stressed. (5—2) 6

**BUS 1605 Principles of Accounting II:** Emphasis is placed on recording, summarizing and interpreting data for management control rather than on book-keeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. The partnership and corporate forms of business are studied. P.R. BUS 1604 or consent. (5—2) 6

**BUS 2304 Business Law I:** A general course to acquaint the student with our court system and the fundamentals of business law on contracts, negotiable instruments and agency. Uniform Commercial Code is considered whenever applicable. (3—0) 3

**BUS 2305 Business Law II:** A continuing study of business laws governing sales, bailments, partnerships, corporations, insurance and property. The Uniform Commercial Code is considered wherever applicable. P.R. BUS 2304 or consent. (3—0) 3

**BUS 2626 Intermediate Accounting I:** An introduction to and review of fundamental processes of accounting. Emphasis is placed upon a thorough working knowledge and understanding of financial statements. Individual items in the balance sheet and income statement are analyzed and evaluated. P.R. BUS 1605 or consent. (5—2) 6

**BUS 2627 Intermediate Accounting II:** A continuation of the study begun in BUS 2626. The application of accounting principles and concepts to account evaluation and income determination is emphasized. Special problems peculiar to corporation and analyses of financial reports are considered. P.R. BUS 2626. (5—2) 6

**BUS 3300 Business Machines:** A general survey of business and office machines to develop a working knowledge of ten-key and full-keyboard adding machines, printing calculator and duplicating equipment. (2—2) 3

**BUS 4325 Advanced Taxation:** A continuation of BUS 4434. Income tax laws and regulations are examined in greater detail and applied to more complex situations. Federal tax litigation and procedures before local IRS authorities are reviewed. P.R. BUS 4434. (3—0) 3

**BUS 4334 Business Finance I:** The financing of business entities with special emphasis on corporations. The various types of corporate stocks and bonds are studied and compared with alternate sources of capital. P.R. BUS 1604 (3—0) 3

**BUS 4335 Business Finance II:** A continued study of the techniques of business finance including capital budgeting, leverage and financial reporting and planning. The role of security markets is studied. P.R. BUS 4334. (3—0) 3

**BUS 4338 Accounting Problems:** Individual worksheet technique is developed by solution of assigned problems, many being taken from recent CPA examinations. Accounting principles recommended by professional accounting societies are studied. P.R. BUS 2627. (3—0) 3

**BUS 4364 Budget and Record Keeping:** The basic principles, methods and procedures for projection, preparation and operation of business budgets. Special attention is given to the involvement of individual departments and the role they play. Emphasis is placed on the necessity for accurate record keeping in order to evaluate the effectiveness of budget planning. P.R. BUS 1604. (3—0) 3

**BUS 4395 Individual Study—Accounting:** This offering is being made to provide students with the opportunity to develop a special program of studies to

fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman and V-P is required. (3-0) 3

**BUS 4404 Auditing:** A study of the theory and practices of auditing, including professional standards and rules of conduct. Specific techniques of auditing various balance sheet accounts, both from the internal auditing and public accounting point of view are studied. Current trends in statement preparation are reviewed. P.R. BUS 2627. (3-2) 4

**BUS 4434 Income Tax Accounting:** A study of federal and state taxes as applied to individuals and various types of business organizations. Topics include the application of tax laws to income, property and business taxes. P.R. BUS 1604. (3-2) 4

**BUS 4444 Cost Accounting:** A detailed study of systems of cost accounting including process, job orders and standard costs. Usefulness of data to management is stressed. P.R. BUS 1605. (3-2) 4

**BUS 4447 Advanced Accounting:** A study of advanced principles and practices. Special emphasis is placed on the development of worksheet techniques for solution of problems. Accounting procedures related to partnerships, branch accounting and parent-subsidiary relationships are studied in depth. Current publications from professional journals are studied and discussed. P.R. BUS 2627. (3-2) 4

**ECO 2300 Economics I:** Development of economic thought, measurement of national income, theory of national income determination, and importance of money supply and fiscal policy are included. (3-0) 3

**ECO 2301 Economics II:** The role of the price system in society is reviewed, including how it affects the allocation of resources and the behavior of consumers and firms. (3-0) 3

**EDP 2306 Computer Programming I (Business):** A study of computer programming and use for business students. After an introduction to computer systems, students will develop program logic and write programs for solving sample business problems. Also, various packaged or prewritten programs will be examined and utilized in problem solution as applied to business data processing. (2-2) 3

**EDP 3300 Introduction to Computer Concepts:** An introductory course in computers for the student who plans to pursue data processing as a career and for the student who desires a general non-technical knowledge of terminology and concepts. No previous knowledge or experience in data processing is required. (3-0) 3

**EDP 4314 Systems and Procedures:** An introductory course in the principles of management systems applied to information data flows. Particular attention is given to forms flow charting, forms analysis and design and systems analysis. P.R. BUS 1604 or equivalent. (3-0) 3

**ENG 3304 Communications I:** This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English. (3-0) 3

**ENG 3305 Communications II:** Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. ENG 3304. (3-0) 3

**ENG 3306 Communications III:** The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. ENG 3305. (3-0) 3

**ENG 4304 Business Communication:** This course develops skills in techniques used in writing business communications. Emphasis is placed on writing effective letters and reports. Action-getting sales letters and letters involving credit, collections, adjustments, complaints, orders, acknowledgments and remittances are covered. P.R. BUS 3404 or equivalent. (3-0) 3

**MAT 1300 Business Mathematics:** A review of basic mathematics in business: interest and bank discounts, payroll records, taxes, retailing costs, markups and discounts, compound interest and annuities. (3-0) 3

**MAT 3304 Business Arithmetic:** A study of fundamental processes: addition, subtraction, multiplication and division of whole numbers and common and decimal fractions. The manipulation and application of per cent, essentials of algebraic operations and per cents as applied to the income statement are also studied. P.R. Satisfactory score on entrance math test. (3-0) 3

**PSY 4300 Applied Psychology:** A study of the principles of psychology which will be of assistance to the understanding of interpersonal relations on the job. Motivation, feeling and emotions are considered with particular reference to on-the-job problems. Other topics investigated are employee selection, supervision, job classification and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and member of the general community. (3-0) 3

**SPH 1300 Oral Communications:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3-0) 3

## Commercial Art

Advertising Design Option

Visual Merchandising Option

Television and Visual Graphics Option

Interior Design Option

The artwork appearing in newspaper and magazine advertisements, on billboards, posters, brochures, catalogs, television commercials, point of purchase displays, etc., is produced by a team of very creative and imaginative men and women, often referred to as "commercial" artists. Most of these artists are employed by business organizations such as television and motion picture studios, commercial art studios, retail stores and advertising agencies. Many trained individuals choose to "free-lance," or perform services for customers on self-made contracts and schedules. Areas of specialization include advertising design, lettering and sign painting, displays and exhibits, technical illustration, book and magazine illustration, fashion illustration, painting and sketching.

In addition to the preparation of graphic art for printed and projected media, the Commercial Art Department offers a special program of study in Interior Design. This program is particularly suited to those who enjoy the design of interior spaces in residential and commercial buildings and the selection of furniture and accessories for those buildings.

### Description Of Curriculum

The Commercial Art curriculum at Central Piedmont Community College is designed to offer the student sound, well-rounded training. Special attention is given to basic art and design principles, the development of original thinking and actions based upon contemporary needs in this field. Through individual counseling, lectures, laboratories and field trips, each student is encouraged to pursue high standards of excellence in preparation for employment. The curriculum is organized so that students entering the College for study in this area are enrolled in a foundation program for the first three quarters.



Following the successful completion of these requirements, the student will select one of four options and specialize in this option the remaining three quarters. The options are: Advertising Design, Visual Merchandising, Television and Visual Graphics, and Interior Design. Employment opportunities are available in many businesses such as the following:

### Advertising Design

- Advertising Agencies
- Graphic Design Studios
- Television Stations
- Retail Store Advertising Departments
- Printing Companies
- Printing Support and Service Companies
- Free-Lance Positions
- Publishing Firms
- Packaging Firms

### Television And Visual Graphics

- Television Stations
- In-Service Teacher Training
- Educational Institutions
- Retail Sales Departments
- Audiovisual Productions Centers
- Industrial and Business Training Centers

### Visual Merchandising

- Specialty Stores
- Retail Department Stores
- Industrial and Commercial Display Firms
- Wholesale Distributors
- Manufacturing Firms

### Interior Design

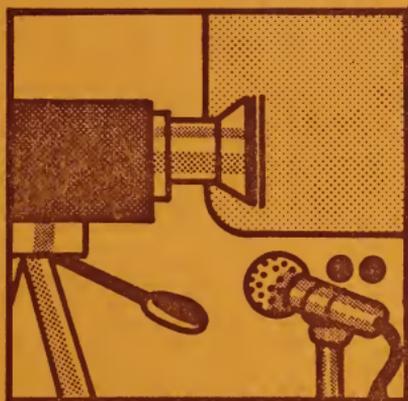
- Interior Design Companies
- Department Stores
- Furniture Stores
- Photographic Studios
- Museums
- Furniture Manufacturers
- Accessory Manufacturers



### Suggested Sequence Of Required Courses For Commercial Art Foundation Program

	Course Title	Hours per Week		Quarter
		Class	Lab	Hours Credit
<b>First Quarter</b>				
VCO 3300	Introduction to the Visual Arts	3	0	3
VCO 3314	Drawing I	2	2	3
VCO 3324	Visual Design I	2	2	3
VCO 4100	Seminar	1	0	1
MAT 1300	Business Mathematics	3	0	3
ENG	Communications Elective	3	0	3
		<hr/>	<hr/>	<hr/>
		14	4	16
<b>Second Quarter</b>				
VCO 3315	Drawing II	2	2	3
VCO 3325	Visual Design II	2	2	3
VCO 3304	Photography I	2	2	3
VCO 4101	Seminar	1	0	1
DFT 3404	Technical Drafting I	2	4	4
ENG	Communications Elective	3	0	3
		<hr/>	<hr/>	<hr/>
		12	10	17

Third Quarter	Course Title	Hours per Week		Quarter
		Class	Studio	Hours Credit
VCO 3305	Photography II	2	2	3
VCO 3326	Visual Design III	2	2	3
VCO 3316	Drawing III	2	2	3
ADV 4300	Advertising Principles	3	0	3
BUS 4323	Sales Development	3	0	3
	General Education Elective	3	0	3
		<hr/>	<hr/>	<hr/>
		15	6	18



### Television And Visual Graphics Option

#### Fourth Quarter

VCO 4304	Typography and Lettering I	2	2	3
VCO 3306	Photography III	2	2	3
TAV 4314	Visual Graphics Studio I	2	2	3
VCO 4414	Advertising Production I	3	2	4
TAV 4214	Visual Projection I	1	2	2
	General Education Elective	3	0	3
		<hr/>	<hr/>	<hr/>
		13	10	18

#### Fifth Quarter

TAV 4204	Professional Practices and Procedures I	1	2	2
VCO 4324	Copywriting I	3	0	3
VCO 4305	Typography and Lettering II	2	2	3
TAV 4215	Visual Projection II	1	2	2
TAV 4315	Visual Graphics Studio II	2	2	3
TAV 4300	Photography IV	2	2	3
VCO 3301	Illustration	2	2	3
		<hr/>	<hr/>	<hr/>
		13	12	19

#### Sixth Quarter

VCO 4325	Copywriting II	3	0	3
TAV 4316	Visual Graphics Studio III	2	2	3
TAV 4224	Television and Visual Graphics Thesis	1	2	2
TAV 4216	Visual Projection III	1	2	2
TAV 4205	Professional Practices and Procedures II	1	2	2
	General Education Elective	3	0	3
		<hr/>	<hr/>	<hr/>
		11	8	15

# Commercial Art Foundation Program

Course Title		Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
VCO 3300	Introduction to Visual Arts	3	0	3
VCO 3314	Drawing I	2	2	3
VCO 3324	Visual Design I	2	2	3
VCO 4100	Seminar	1	0	1
MAT 1300	Business Mathematics	3	0	3
ENG	Communications Elective	3	0	3
		14	4	16
<b>Second Quarter</b>				
VCO 3315	Drawing II	2	2	3
VCO 3325	Visual Design II	2	2	3
VCO 3304	Photography I	2	2	3
VCO 4101	Seminar	1	0	1
DFT 3404	Technical Drafting I	2	4	4
ENG	Communications Elective	3	0	3
		12	10	17
<b>Third Quarter</b>				
VCO 3305	Photography II	2	2	3
VCO 3326	Visual Design III	2	2	3
VCO 3316	Drawing III	2	2	3
ADV 4300	Advertising Principles	3	0	3
BUS 4323	Sales Development	3	0	3
	General Education Elective	3	0	3
		15	6	18
				
<b>Advertising Design Option</b>				
<b>Fourth Quarter</b>				
VCO 4304	Typography and Lettering I	2	2	3
ADV 4304	Advertising Studio I	2	2	3
VCO 4414	Advertising Production I	3	2	4
VCO 3306	Photography III	2	2	3
	General Education Elective	3	0	3
		12	8	16
<b>Fifth Quarter</b>				
VCO 4324	Copywriting I	3	0	3
VCO 4305	Typography and Lettering II	2	2	3
ADV 4305	Advertising Studio II	2	2	3
VCO 4415	Advertising Production II	3	2	4
VCO 3301	Illustration	2	2	3
	General Education Elective	3	0	3
		15	8	19
<b>Sixth Quarter</b>				
VCO 4325	Copywriting II	3	0	3
ADV 4306	Advertising Studio III	2	2	3
VCO 4416	Advertising Production III	3	2	4
ADV 4204	Advertising Thesis	0	4	2
ADV 4214	Professional Practices and Procedures	1	2	2
	General Education Elective	3	0	3
		12	10	17

## Commercial Art Foundation Program

Course Title		Hours per Week	Week	Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
VCO 3300	Introduction to Visual Arts	3	0	3
VCO 3314	Drawing I	2	2	3
VCO 3324	Visual Design I	2	2	3
VCO 4100	Seminar	1	0	1
MAT 1300	Business Mathematics	3	0	3
ENG	Communications Elective	3	0	3
		14	4	16
<b>Second Quarter</b>				
VCO 3315	Drawing II	2	2	3
VCO 3325	Visual Design II	2	2	3
VCO 3304	Photography I	2	2	3
VCO 4101	Seminar	1	0	1
DFT 3404	Technical Drafting I	2	4	4
ENG	Communications Elective	3	0	3
		12	10	17
<b>Third Quarter</b>				
VCO 3305	Photography II	2	2	3
VCO 3326	Visual Design III	2	2	3
VCO 3316	Drawing III	2	2	3
ADV 4300	Advertising Principles	3	0	3
BUS 4323	Sales Development	3	0	3
	General Education Elective	3	0	3
		15	6	18



### Visual Merchandising Option

<b>Fourth Quarter</b>				
VCO 4304	Typography and Lettering I	2	2	3
VCO 3306	Photography III	2	2	3
VIM 4504	Visual Merchandising I	2	6	5
VIM 4200	Creative Design	1	2	2
	General Education Elective	3	0	3
		10	12	16
<b>Fifth Quarter</b>				
VIM 4304	Retail Advertising and Promotion I	2	2	3
VIM 4505	Visual Merchandising II	2	6	5
VCO 4310	Fashion Illustration I	2	2	3
VCO 4324	Copywriting I	3	0	3
	General Education Elective	3	0	3
		12	10	17
<b>Sixth Quarter</b>				
VIM 4305	Retail Advertising and Promotion II	2	2	3
VIM 4506	Visual Merchandising III	2	6	5
VCO 4311	Fashion Illustration II	2	2	3
VIM 4201	Professional Practices and Procedures	1	2	2
	General Education Elective	3	0	3
		10	12	16

# Commercial Art Foundation Program

		Course Title		Hours per Week		Quarter
		Class	Lab.	Hours	Credit	
<b>First Quarter</b>						
VCO	3300	Introduction to Visual Arts	3	0	3	
VCO	3314	Drawing I	2	2	3	
VCO	3324	Visual Design I	2	2	3	
VCO	4100	Seminar	1	0	1	
MAT	1300	Business Mathematics	3	0	3	
ENG		Communications Elective	3	0	3	
			<hr/>	<hr/>	<hr/>	<hr/>
			14	4	16	
<b>Second Quarter</b>						
VCO	3315	Drawing II	2	2	3	
VCO	3325	Visual Design II	2	2	3	
VCO	3304	Photography I	2	2	3	
VCO	4101	Seminar	1	0	1	
DFT	3404	Technical Drafting I	2	4	4	
ENG		Communications Elective	3	0	3	
			<hr/>	<hr/>	<hr/>	<hr/>
			12	10	17	
<b>Third Quarter</b>						
VCO	3305	Photography II	2	2	3	
VCO	3326	Visual Design III	2	2	3	
VCO	3316	Drawing III	2	2	3	
ADV	4300	Advertising Principles	3	0	3	
BUS	4323	Sales Development	3	0	3	
		General Education Elective	3	0	3	
			<hr/>	<hr/>	<hr/>	<hr/>
			15	6	18	



Interior Design Option

## Fourth Quarter

EDN	4300	Survey of Interior Design	3	0	3	
DFT	3334	Architectural Drafting I	2	2	3	
EDN	4414	Applied Problems Studio I	2	4	4	
EDN	4404	Interior Presentations	2	4	4	
EDN	4314	Survey of Painting, Sculpture and Interior Design I	3	0	3	
			<hr/>	<hr/>	<hr/>	<hr/>
			12	10	17	

## Fifth Quarter

ARC	3200	Introduction: History of Architecture	2	0	2	
EDN	4315	Survey of Painting, Sculpture and Interior Design II	3	0	3	
EDN	4415	Applied Problems Studio II	2	4	4	
EDN	4307	Survey of Materials	1	4	3	
		General Education Elective	3	0	3	
			<hr/>	<hr/>	<hr/>	<hr/>
			11	8	15	

## Sixth Quarter

EDN	4406	Contemporary Interiors	2	4	4	
EDN	4400	Professional Practices and Procedures	2	4	4	
EDN	4416	Applied Problems Studio III	2	4	4	
EDN	4202	Thesis	0	4	2	
		General Education Elective	3	0	3	
			<hr/>	<hr/>	<hr/>	<hr/>
			9	16	17	

## Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Commercial Art

**ADV 4204 Advertising Thesis:** A project to be arranged between the student and major instructor to encourage individual and original concepts as relating to the student's vocational interests. A professional portfolio is prepared and the student learns from real life problems how to present himself and his portfolio to prospective employers. (0—4) 2

**ADV 4214 Professional Practices and Procedures:** A study of professional practices involved in the organization and operation of businesses concerned with advertising art production and reproduction. Involves student research into and reports on the operation of advertising agencies, art agencies and art departments in retail stores, packaging and printing companies and manufacturing corporations. Includes corporate structure, buying, selling, pricing, operating expenses, contracts, job descriptions, etc. P.R. ADV 4305, VCO 4415. (1—2) 2

**ADV 4300 Advertising Principles:** A comprehensive survey of mass communication media; its economic and social significance as related to the problems of production, marketing and consumption. Existing advertising media, terminology, reference materials and current publications. (3—0) 3

**ADV 4304 Advertising Studio I:** Basic studio skills required of the advertising design artist. Through practical problems the students learn techniques for solving graphic arts problems and are introduced to art media used today in art and advertising agencies. (2—2) 3

**ADV 4305 Advertising Studio II:** Continuation of Advertising Studio I. Originating concepts and effective solutions in selected media. Layouts, comprehensive, and mechanical art. P.R. ADV 4304. (2—2) 3

**ADV 4306 Advertising Studio III:** Continuation of Advertising Studio II. Advanced graphic problems in comprehensive and mechanical form. P.R. ADV 4305. (2—2) 3

**ARC 3200 Introduction: History of Architecture:** A course designed to provide fundamental knowledge of the historical styles and evolution of architecture from the earliest times to the present day. (2—0) 2

**BUS 4323 Sales Development:** An analysis of the principles and techniques of effective selling. The qualifications, training and obligations of the salesman are emphasized through sales demonstrations and interviews. (3—0) 3

**DFT 3404 Technical Drafting I:** An introduction to drafting and design practices and principles. The attainment of the basic skills and techniques of drafting including use of drafting equipment, lettering, freehand, orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning and noting. Methods of reproducing, filing and storing drawings are studied and the student is introduced to "working drawings." (2—4) 4

**DFT 3334 Architectural Drafting I:** A course designed to provide fundamental knowledge of the principles of drafting. The basic skills and techniques of drafting are taught including use of the drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction and orthographic drawings. Solution of projection problems dealing with principles of descriptive geometry involving points, lines, planes, and connectors. The principles of isometric, oblique, and perspective drawings are introduced. (2—2) 3

- EDN 4202 Thesis:** A project to be arranged between the student and the major instructor to encourage individual and original concepts relating to the student's interests and his field of specialization. The project will be an attempt to integrate the experience learned in the program. The project will reflect conditions the student will encounter upon employment. (0—4) 2
- EDN 4300 Survey of Interior Design:** A survey of interior design to acquaint the student with the nature and scope of the study he has undertaken. Reviews the type of work of the interior designer and acquaints the student with aesthetic and business considerations of the profession. (3—0) 3
- EDN 4307 Survey of Materials:** A survey of natural and man-made materials available to man for his use in interior design. Emphasis placed upon furniture, floor coverings, paper and fabric coverings, textiles and their use in interior design. This study also includes natural and man-made products available for use in planned design, such as furniture, carpets, lighting fixtures, accessories, building materials, textile products, service equipment, utility standards. Course may include trips to factories, showrooms and plants, lectures by practicing professionals. P.R. EDN 4414. (1—4) 3
- EDN 4314—Survey of Painting, Sculpture and Interior Design I:** A comprehensive analysis of major movements in painting, sculpture and interior design from classical periods through the twentieth century. (3—0) 3
- EDN 4315 Survey of Painting, Sculpture and Interior Design II:** Continuation of Survey of Painting, Sculpture and Interior Design I with emphasis on application of knowledge in contemporary interiors. P.R. EDN 4314 (3—0) 3
- EDN 4400 Professional Practices and Procedures:** An analysis of the business aspects of interior design. Public and customer relations, budgets, costs, pricing, resources, employer-employee relations. This study includes guest speakers and field trips. Continued emphasis will be placed on developing professional attitudes and practices. (2—4) 4
- EDN 4404 Interior Presentations:** Designed to develop the student's technical skill in rendering elements that compose the exterior and interior environment; fabric, furniture, rock, masonry, foliage, etc. Emphasis also placed upon presentation of designs in designer-clientele relationships. P.R. VCO 3316. (2—4) 4
- EDN 4406 Contemporary Interiors:** A study of current techniques in designing interiors for residential, commercial and industrial buildings. Special attention to changing needs is noted and anticipating further changes in our life-time. Emphasis is placed upon present materials and furnishings and their expressive potential in contemporary interior design. Student is made aware of his responsibility in shaping the environment in a healthy vigorous community. P.R. EDN 4415. (2—4) 4
- EDN 4414 Applied Problems Studio I:** An exploration of the fundamentals of interior design in space planning, convenience, function, and effective visual effects. Planned problems to achieve workable and practical solutions to current needs ranging from the single dwelling to the business and recreational complex. Graphic solutions and presentations in two and three dimensional form. P.R. VCO 3326. (2—4) 4
- EDN 4415 Applied Problems Studio II:** A continuation of Applied Problems Studio I emphasizing advanced solutions to special space problems. Presentations and complete specifications. P.R. EDN 4414. (2—4) 4
- EDN 4416 Applied Problems Studio III:** The student is required to investigate, plan, and execute complete interior designs for a cross section of current interiors. Site and specifications will be issued for the designer's response. Research and coordination with the architect, resource persons and supply outlets will be stressed. P.R. EDN 4415. (2—4) 4
- MAT 1300 Business Mathematics:** A review of basic mathematics in business: interest and bank discounts, payroll records, taxes, retailing costs, markups and discounts, compound interest and annuities. (3—0) 3
- TAV 3300 Visual Aids Development:** An introductory course designed for those whose occupation or avocation requires them to develop and utilize projected visuals or displays. An introduction to basic graphic equipment will be included. Emphasis will be given to the development and choice of useful and emphatic visual materials. The use and maintenance of basic projection equipment will be included. (2—2) 3

- TAV 4204 Professional Practices and Procedures I:** Basic study of business practices related to the production of graphic art for "projected" media. Covers organization and operation of business, corporate structure, business law and ethics, public relations, buying, selling, pricing, taxes, insurance, wages, salaries, etc. (1-2) 2
- TAV 4205 Professional Practices and Procedures II:** How to locate sources of supply and how to requisition supplies. How to organize work flow. How to handle various job requirements; interrelations with clients and personnel. P.R. TAV 4204. (1-2) 2
- TAV 4214 Visual Projection I:** Introduction to the operation and minor upkeep of projection machines such as 35 mm slide projector, film strip projector, film loop projectors; tape recorders, audio-tutorial machines, video tape recorders, How to splice 16 mm film and film strips. Care of projectuals after usage, development of file system and storage. (1-2) 2
- TAV 4215 Visual Projection II:** Continuation of Visual Projection I with the machines now used to screen quality and value of student produced graphics. Including selection by quality of graphics suitable for television as opposed to educational or sales application. Basic light and staging for television and audiovisual presentations, full set vignettes, television spot and continuing presentations. Designing sets for television and multi media presentations for audiovisual. How to set up floor plans and light plots for TV. How to set up displays and bulletin boards for AV. P.R. TAV 4314, TAV 4214. (1-2) 2
- TAV 4216 Visual Projection III:** Simulated audiovisual and television art departments. Students must meet and communicate with faculty members on campus and prepare and produce the required visuals for a stipulated number of presentations. Student will accompany the instructor to the classroom and view the visuals as they are actually used, observing conditions and reactions of students. Each student will assist a faculty member in planning and preparation of one audio-tutorial lesson (either television or tape and film strip). P.R. TAV 4315, TAV 4215. (1-2) 2
- TAV 4224 Television and Visual Graphics Thesis:** A project to be arranged between the student and the major instructor and department chairman to encourage individual and original concepts relating to the student's interests and his field of specialization. The project will be an attempt to integrate the experience learned in the program and focus the student's accumulative knowledge on a single comprehensive problem. It is anticipated that the problem will reflect those the student will likely encounter upon employment in the field. P.R. TAV 4214. (1-2) 2
- TAV 4300 Photography IV:** Continuation of photographic procedures as established in foundation program with exploration into reversal kodolith film for slides and overhead projection. Use of copy stand and on-location photography. Use of 16 mm camera, single frame for simple animation and live action on location. Difference between mounting and masking slides for audiovisual from television. Exploration of slide mounts and application to each media. Use of poloroid camera on location and for slides. Productions of slides for rear screen projection. P.R. VCO 3306. (2-2) 3
- TAV 4314 Visual Graphics Studio I:** Introduction to requirements and limitation of graphics for various projection devices. Layout, paste-up, overall design of visuals for various projection. How to conceive and execute a story board. (2-2) 3
- TAV 4315 Visual Graphics Studio II:** Production of art work for projection on various projection devices; preparation of art work for film strip and slides for 35 mm. Preparation of art work for sequence viewing on 35 mm studio cards in TV. Preparation of art work process and mounting of multiple color and multiple layer projectuals for overhead. Graphic preparation of simple animation. Matching sound to sight with proper emphasis on each. P.R. TAV 4314. (2-2) 3
- TAV 4316 Visual Graphics Studio III:** Production of suitable backdrops, large cycloramas, large charts, graphs, displays, bulletin board display. How to use Munsel color system for color and black and white television. Use of Chroma key, super impositions and other electronic effects in television. P.R. TAV 4315, TAV 4215. (2-2) 3
- VCO 3300 Introduction to the Visual Arts:** A comprehensive survey of the visual arts and their influence in the modern world. Lectures and discussions

will seek to obtain a better understanding of visual forms of expression present today. (3—0) 3

**VCO 3301 Illustration:** Survey of illustrative techniques, assigned graphics problems in various mediums for stated communicative formats. (2—2) 3

**VCO 3304 Photography I:** An introduction to the science of photography, photographic equipment and materials. A study of fundamental techniques of the camera and its expressive possibilities in relation to the field of design and visual communications. Assigned problems in shooting, darkroom procedures and presentation of photographic prints. (2—2) 3

**VCO 3305 Photography II:** Continuation of Photography I with emphasis on product photography and the use of photography in advertising. P.R. VCO 3304. (2—2) 3

**VCO 3306 Photography III:** A study of advanced photographic techniques used in advertising design, visual merchandising and television graphics. Particular emphasis is placed on photo-mechanical processes used in contemporary visual communications. Includes an introduction to the field of color photography. P.R. VCO 3305. (2—2) 3

**VCO 3314 Drawing I:** An introduction to the basic manipulative techniques of drawing. Emphasis is placed on the various drawing mediums, drawing surfaces, and the encouragement of graphic expression, crayon, chalk, and mixed mediums. (2—2) 3

**VCO 3315 Drawing II:** Continuation of Drawing I emphasizing the human figure and its expressive potentials. The student will gain experience in perspective, light and shade, mass, size and placement, character and expression in graphite, pen and ink, crayon and chalk, transparent and opaque watercolor. P.R. VCO 3314. (2—2) 3

**VCO 3316 Drawing III:** The encouragement of individual selection of materials and techniques, subject and execution to assigned problems in drawing. Perspective, reference files and research will be stressed in the solution of practical problems. P.R. VCO 3315. (2—2) 3

**VCO 3324 Visual Design I:** A study of the basic design fundamentals and principles, and visual problem solving methods. Emphasis is placed upon assigned problems in basic design. Studio terminology, equipment, and materials will also be stressed. (2—2) 3

**VCO 3325 Visual Design II:** Assigned problems in two and three dimensional design requiring attention to principles of design. Color theory will be presented. P.R. VCO 3324. (2—2) 3

**VCO 3326 Visual Design III:** Advanced problems in design. Solutions to practical problems in design for advertising, visual merchandising, photography and television graphics will be stressed. P.R. VCO 3325. (2—2) 3

**VCO 4100 Seminar:** A weekly seminar in which programs will be presented on topics of particular interest to the students. (1—0) 1

**VCO 4101 Seminar:** Continuation of weekly seminars in which programs will be presented on topics of particular interest to students of the Visual Communications Department. Guest speakers, formal programs, demonstrations and student presentations will be used. Emphasis is on career opportunities in Visual Communications. (1—0) 1

**VCO 4304 Typography and Lettering I:** Fundamentals of lettering. Execution of finished lettering for reproduction. Lettering and typography indication for layouts and comprehensive design. A survey of typographic terminology, equipment and materials. Applied problems in various mediums. (2—2) 3

**VCO 4305 Typography and Lettering II:** Continuation of Typography and Lettering. Assigned problems in special purpose materials. Emphasis upon application to the product and its package, posters, signs and advertisement headings. P.R. VCO 4304. (2—2) 3

**VCO 4310 Fashion Illustration I:** The student is introduced to the basic media and rendering techniques as applied to the human figure, apparel, accessories,

and furnishings; how to graphically illustrate individual thoughts and ideas; and a factual development of the fashion figure as a means of communication.

(2-2) 3

**VOC 4311 Fashion Illustration II:** A continuous investigation into a further development of techniques of graphical interpretation as applied in layout and design for magazines, newspapers, catalogues, and other printed materials. This shall include rough to finish art with an emphasis upon different figure types in growth development from the infant to old age.

(2-2) 3

**VCO 4324 Copywriting I:** A study of the techniques used in originating effective copy for various communicative media. Emphasis is placed upon a review of existing printed materials, the encouragement of originality and completeness of purpose, attention to format. Theory and practice of originating copy for media such as retail store, outdoor posters, leaflets, business and consumer publications.

(3-0) 3

**VCO 4325 Copywriting II:** Continuation of Copywriting I. Progressively complex problems in originating copy for catalogues, annual reports, institutional brochures and booklets. Applied problems in typography specifications, selection of type, size, arrangement, space considerations. P.R. VCO 4324.

(3-0) 3

**VCO 4414 Advertising Production I:** An introduction to the mechanics of printed reproduction in its various forms. Graphic arts terminology and techniques. Physical requirements of art work for reproduction. A survey of existing printed materials and production requirements.

(3-2) 4

**VCO 4415 Advertising Production II:** Continuation of Advertising Production I with emphasis on physical requirements and production techniques for lithography, letterpress reproduction. P.R. VCO 4414.

(3-2) 4

**VCO 4416 Advertising Production III:** Continuation of Advertising Production II. Proper selection, budgeting printing jobs, extensive field trips to production facilities. P.R. VCO 4415.

(3-2) 4

**VIM 4200 Creative Design:** An experimental project in print, packaging, film or TV; new tools, materials, or techniques, graphic and/or structural exposition of new ideas from other fields.

(1-2) 2

**VIM 4201 Professional Practices and Procedures:** On the job conduct, budgeting, requisitioning procedures, staff responsibilities, organization and direction.

(1-2) 2

**VIM 4304 Retail Advertising and Promotion I:** The role of retail advertising in today's business world, present practices, functions performed, principles controlling effective operation, its economic and social values, and the problems encountered. The use or choice of media, promotion policy of retail outlet, manufacturer, local prices and costs, the market budget, types of promotion, and limitations.

(2-2) 3

**VIM 4305 Retail Advertising and Promotion II:** Continuation of Retail Advertising and Promotion I. Emphasis on the planning and coordinating for a yearly advertising campaign. Selection of staff and media, budgeting, and physical considerations. P.R. VIM 4304.

(2-2) 3

**VIM 4504 Visual Merchandising I:** Introduction to the planning and execution of designs for window and interior spaces. Preparation and presentation of merchandise. Practical problems in installation, survey of techniques for achieving visual unity of components and appropriateness for purpose.

(2-6) 5

**VIM 4505 Visual Merchandising II:** Continuation of Visual Merchandising I. Emphasis is placed on coordinated planning of windows and interiors, backgrounds, installation of fixtures, maintenance of units. Technical and mechanical problems and solutions. Special theme and seasonal planning. P.R. VIM 4504.

(2-6) 5

**VIM 4506 Visual Merchandising III:** Continuation of Visual Merchandising II with emphasis on lighting techniques and the creative use of materials in advanced window and interior space problems. Critique by professional standards. P.R. VIM 4505.

(2-6) 5

## Electives

**EDN 4200 Interior Decorating for the Home Owner:** This course is designed to help the home owner plan and execute interior designs for the home. Practical aids concerning the selection and location of furniture and furnishings for convenience, comfort and beauty are provided. (1—2) 2

**EDN 4201 Color Schemes for Interior Design:** This is a special course for the home owner to develop practical color schemes for home use. Students work from their home plans in solving everyday color problems. The emotional, thermal and optical effects of color arrangements for interiors are studied. (1—2) 2

**EDN 4203 Period Furniture and Furnishings:** A study of Italian, Spanish, French and English period furniture and furnishings and their application in practical designs for contemporary interiors. (2—0) 2

**EDN 4210 Antique Furniture and Furnishings:** A study of antique English and American furniture and furnishings and their use in contemporary interiors. (2—0) 2

**EDN 4301 Practical Problems in Interior Design I:** This course deals with problems the interior designer confronts in everyday situations. Students make complete presentations as if submitting an interior design to a client. Simulated client specifications for rooms are provided, and the student prepares decorative treatment according to professional methods. (2—2) 3

**VCO 4300 Fashion Merchandising and Promotion:** The student will be given the opportunity to develop an understanding of the procedures in merchandising calculations; purchase planning, operating statements, mark-up, pricing, inventories, turn-over, model stock plans. The determination of a promotion policy which will include market analysis, media, budget, calendar, timing. (3—0) 3

**VCO 4301 Stage and Scenery Design:** Covering the elements of design; rough sketch to finished model. The student will explore the appropriateness, size, psychological effect, practicality and usefulness for action, lighting, budget, equipment, style, and limitations. Use of various materials and terminology. (2—2) 3

**VCO 4302 Silk-Screen Printing:** The student will be introduced to silk-screen printing; preparation of the screens and materials, care and maintenance of tools and material. (2—2) 3

**VCO 4303 Fabric Design:** An introduction to the designing and printing of printed fabrics within specific technical limitations of the industry. Types of weaves, pattern drafting and experiments. (2—2) 3

**VCO 4312 Fashion Illustration III:** An intensive and continuous exploration for new techniques; student initiated research; studio procedures as found in business and industry; and preparation of art work for inclusion in portfolio. (2—2) 3

**VCO 4313 Cartooning and Caricaturing:** The student will be given the opportunity to express his interest in drawing the human in exaggeration by projection and distortion. Studio exercises will explore the problems in proportions, expressions, color, movement, types or styles of persons, principles of light and shadow, clothing and drapery, and perspective foreshortening. (2—2) 3

**VCO 4320 Package Design I:** An introduction to students of the basic needs of good design in packaging. (2—2) 3

**VCO 4321 Package Design II:** Continuing exploration into good package design. The student will research package design as per instructors' directions. (2—2) 3

**VCO 4323 Commercial Sign Painting:** The principles of layout, design, typography, and color as it applies to sign painting for business and industry (2—2) 3

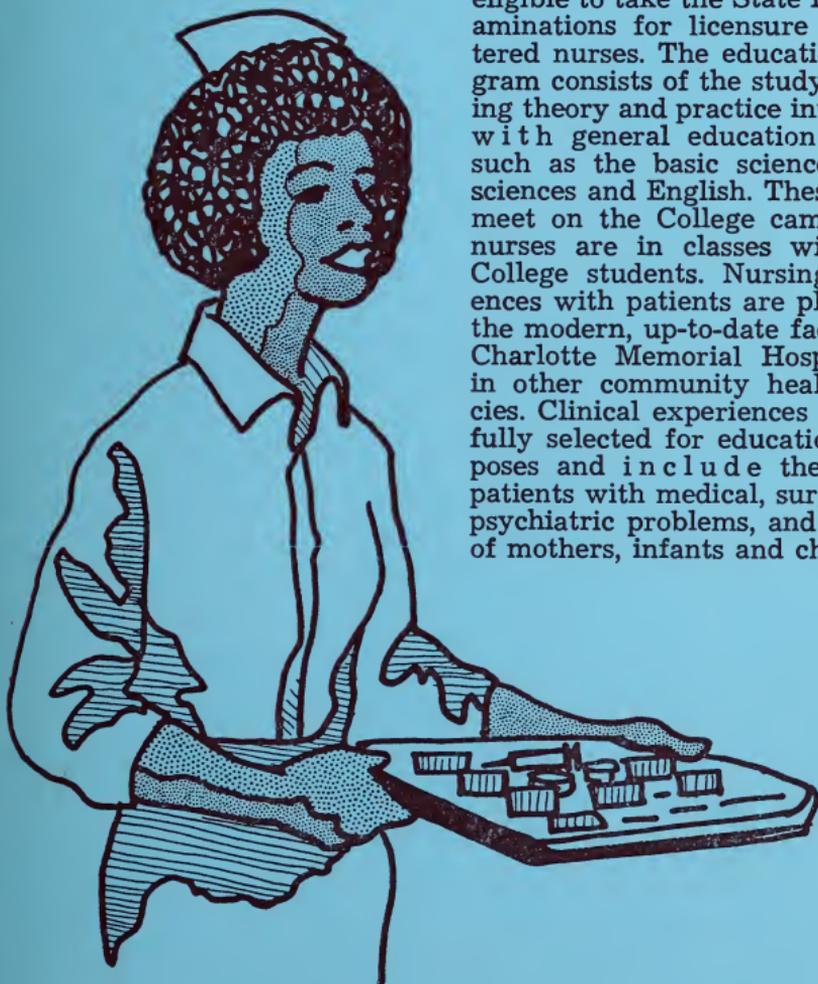
**VCO 4390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3—0) 3

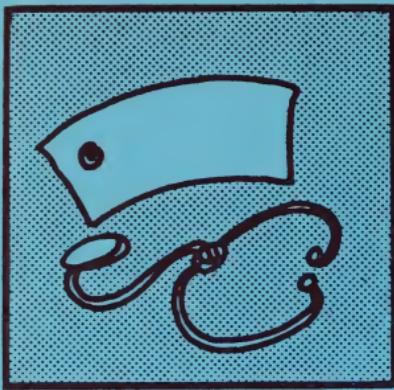
## Associate Degree Nursing

The need for adequately prepared registered nurses is acute, and this need is increasing. As advances in medical science continue to expand the life expectancy of individuals, the resulting growth in population increases the demand for nursing services. Nursing is devoted to conserving life and promoting health; it is based upon scientific knowledge, nursing skills and an understanding of the nature and needs of human beings in health and in sickness. The course of study leading to an Associate Degree in Nursing prepares the nurse to serve effectively in general duty nursing positions in hospitals and comparable settings. Students are admitted to the Associate Degree Nursing Curriculum in the Fall and Spring Quarters.

### Description Of Curriculum

The degree Associate in Applied Science in Nursing will be awarded upon successful completion of this curriculum and graduates will be eligible to take the State Board examinations for licensure as registered nurses. The educational program consists of the study of nursing theory and practice interwoven with general education subjects such as the basic sciences, social sciences and English. These classes meet on the College campus, and nurses are in classes with other College students. Nursing experiences with patients are planned in the modern, up-to-date facilities of Charlotte Memorial Hospital and in other community health agencies. Clinical experiences are carefully selected for educational purposes and include the care of patients with medical, surgical and psychiatric problems, and the care of mothers, infants and children.





### Suggested Sequence Of Required Courses For Associate Degree Nursing

Course Title	Hours per Week			Quarter Hours Credit
	Class	Lab.	Clin.	
<b>First Quarter</b>				
NUR 3704 Fundamentals of Nursing I	3	4	6	7
BIO 3504 Life Science I	3	4	0	5
PSY 2504 General Psychology	5	0	0	5
	11	8	6	17
<b>Second Quarter</b>				
NUR 3705 Fundamentals of Nursing II	3	4	6	7
BIO 3505 Life Science II	3	4	0	5
PSY 2505 Human Development	5	0	0	5
	11	8	6	17
<b>Third Quarter</b>				
NUR 3804 Physical and Mental Health Nursing I	3	4	9	8
BIO 3506 Life Science III	3	4	0	5
SOC 2514 Introduction to Sociology	5	0	0	5
	11	8	9	18
<b>Fourth Quarter</b>				
NUR 3905 Physical and Mental Health Nursing II	3	4	12	9
ENG 1304 English Composition I	3	0	0	3
SOC 1500 Marriage and the Family	5	0	0	5
	11	4	12	17
<b>Fifth Quarter</b>				
NUR 4914 Maternal-Child Health Nursing I	3	4	12	9
ENG 1305 English Composition II	3	0	0	3
*Elective	3	0	0	3
	9	4	12	15
<b>Sixth Quarter</b>				
NUR 4915 Maternal-Child Health Nursing II	3	4	12	9
ENG 1306 English Composition III	3	0	0	3
*Elective	3	0	0	3
	9	4	12	15
<b>Seventh Quarter</b>				
NUR 4906 Physical and Mental Health Nursing III	3	4	12	9
NUR 4304 Trends in Nursing	1	4	0	3
	4	8	12	12

\*Electives must be chosen from the Transfer-Liberal Arts Program. Each elective must carry a minimum of three quarter hours credits. One of the electives is to be selected from the Social Sciences. The department chairman is to approve the electives.

## Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture, clinic and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Associate Degree Nursing

**BIO 3504 Life Science I:** A course designed to provide an understanding of human anatomy, physiology and microbiology, coordinated with a study of the principles of chemistry and physics in support of these subjects. (3—4—0) 5

**BIO 3505 Life Science II:** A continuation of BIO 3504. P.R. BIO 3504. (3—4—0) 5

**BIO 3506 Life Science III:** A continuation of BIO 3505. P.R. BIO 3505. (3—4—0) 5

**ENG 1304 English Composition I:** Study of expository writing based on reading and class discussion; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods. P.R. Placement examination or consent. (3—0—0) 3

**ENG 1305 English Composition II:** Continuing study of composition based on ideas in the short story and the novel, emphasizing the techniques of analysis and synthesis in writing. P.R. ENG 1304 or consent (3—0—0) 3

**ENG 1306 English Composition III:** Intensive study of composition, emphasizing the critical reading of drama and poetry, leading into the basic techniques of research, and culminating in a formally documented research paper. P.R. ENG 1305 or consent. (3—0—0) 3

**NUR 3704 Fundamentals of Nursing I:** The problem solving approach is used as an approach to nursing care. The course begins with the students' understanding on man's basic needs and the problems which arise when these needs are not met. Scientific principles and applications from the areas of nursing, pharmacology and nutrition are included. Through knowledge, technical skills and interpersonal relationship techniques, the student learns to provide patient-centered nursing care. P.R. Admission to Associate Degree Nursing Program. (3—4—6) 7

**NUR 3705 Fundamentals of Nursing II:** This course is designed to increase the students' ability to recognize patients' reactions to illness, to observe basic processes of illness and to plan and give individualized nursing care. Emphasis is placed upon the development of skills basic to specific nursing situations. P.R. NUR 3704. (3—4—6) 7

**NUR 3804 Physical and Mental Health Nursing I:** A study of the nursing needs of adults based upon developmental tasks and major health problems. Principles of pharmacology, nutrition and interpersonal relationships continue to be interwoven, and concepts of mental health and their application in planning nursing care are included. P.R. NUR 3705. (3—4—9) 8

**NUR 3905 Physical and Mental Health Nursing II:** Continued study of the nursing needs and major problems of adults. A portion of this course is designed to provide insight into the nursing needs of patients with behavior disorders due to mental illness. Emphasis is placed on the development of interpersonal relationships and increased nursing skills. P.R. NUR 3804 (3—4—12) 9

**NUR 4304 Trends in Nursing:** A study of the major trends in modern nursing and their effects on nursing service and nursing education. Emphasis is placed on the responsibilities of the nurse as a member of the health team and as a citizen in the community. (1—4—0) 3

**NUR 4906 Physical and Mental Health Nursing III:** This course is designed to provide skills necessary for the care of medical and surgical patients with more complex nursing problems. Emphasis is placed on meeting both physical and emotional needs of patients. Concepts of progressive patient care and their application to patient-centered nursing are included. P.R. NUR 3905 and a grade point average of 2.0. (3—4—12) 9

**NUR 4914 Maternal-Child Health Nursing I:** A study of maternal and child care based on the reproductive and developmental cycles of mothers and children. Emphasis is placed on the concepts of family-centered care and on health teaching. Knowledge of the normal maternity cycle and of the growth and development of the child from infancy through pre-adolescence is used as a basis for recognition of the deviations from normal which may be produced by illness and hospitalization and for planning nursing care. P.R. NUR 4906, SOC 1500. (3—4—12) 9

**NUR 4915—Maternal-Child Health Nursing II:** A continuation of NUR 4914. P.R. NUR 4914. (3—4—12) 9

**PSY 2504 General Psychology:** A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements and theories of psychology. (5—0—0) 5

**PSY 2505 Human Development:** Development of the normal child and adolescent, with consideration of the social, biological and cultural influence upon growth. P.R. PSY 2504. (5—0—0) 5

**SOC 1500 Marriage and the Family:** Study of the American family with attention given to courtship, marriage, family relationships and interdependencies and social or cultural stresses emerging from contemporary family life. (5—0—0) 5

**SOC 2514 Introduction to Sociology:** An analysis of the society and culture dealing with social organization, control, institutions, stratification and social change. (5—0—0) 5

## **Business Administration**

The opportunities in business are increasing in North Carolina. With the growth of population and industrial development in this state, business is becoming more competitive. Businesses are turning to such modern techniques as automation and electronic data processing in order to remain competitive. The best opportunities in business will be filled by students with specialized education in business administration. The graduate of the Business Administration curriculum may enter a variety of career opportunities in such businesses as: advertising, banking, credit, finance, marketing, wholesaling, insurance, real estate, transportation, communications, manufacturing and the hotel, tourist and travel industry.

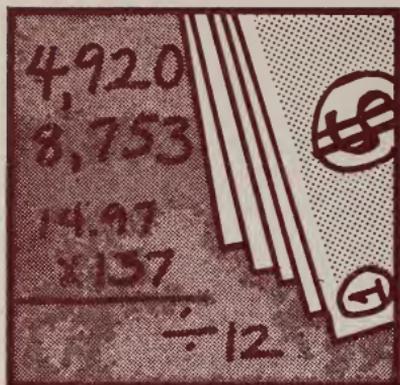
### **Description Of Curriculum**

The Business Administration curriculum is designed to prepare the student for employment in several occupations common to business. Training is aimed at preparing the student in many phases of administrative work that are encountered in the average business.

The specific objectives of the Business Administration curriculum are to develop the following competencies: (1) understanding of the principles of organization and management in business control; (2) understanding our economy through study and analysis of the role of marketing, wholesaling, retailing and manufacturing; (3) knowledge in specific elements of accounting, finance and business law; (4) understanding and skill in effective communication for business; (5) knowledge of human relations as they apply to successful business operations in a rapidly expanding economy.

The Business Administration curriculum provides options which give the student the opportunity to specialize in one of the following areas: Business Management, Sales and Marketing, Real Estate, and Transportation Management. The first four quarters constitute a core curriculum for all Business Administration. Specialization in the particular area of interest is in the fifth and sixth quarters. The student may choose his own option and electives. Graduates will receive the degree Associate in Applied Science in Business Administration. The title of the degree will also reflect the specific option chosen by the graduate.

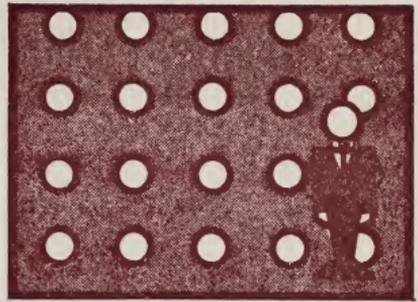




### Suggested Sequence Of Required Courses For Business Administration — Sales and Marketing

	Course Title	Hours per Week Class	Week Lab.	Quarter Hours Credit
<b>First Quarter</b>				
BUS 1400	Introduction to Business	3	2	4
BUS 1604	Principles of Accounting I	5	2	6
ENG 3304	Communications I**	3	0	3
MAT 3304	Business Arithmetic*	3	0	3
		<hr/>	<hr/>	<hr/>
		14	4	16
<b>Second Quarter</b>				
BUS 1605	Principles of Accounting II	5	2	6
ECO 3301	American Economic History***	3	0	3
EDP 3300	Introduction to Computer Concepts	3	0	3
ENG 3305	Communications II**	3	0	3
MAT 1300	Business Mathematics*	3	0	3
		<hr/>	<hr/>	<hr/>
		17	2	18
<b>Third Quarter</b>				
BUS 2304	Business Law I	3	0	3
ECO 3302	Labor Economics *** (or HIS 1321)	3	0	3
EDP 4314	Systems and Procedures	3	0	3
ENG 3306	Communications III	3	0	3
	Elective****	3	0	3
		<hr/>	<hr/>	<hr/>
		15	0	15
<b>Fourth Quarter</b>				
BUS 2305	Business Law II	3	0	3
ECO 2300	Economics I***	3	0	3
EDP 2306	Computer Programming I (Business)	2	2	3
PSY 4300	Applied Psychology	3	0	3
SPH 1300	Oral Communications	3	0	3
BUS 3304	Business Statistics	3	0	3
		<hr/>	<hr/>	<hr/>
		17	2	18
<b>Fifth Quarter</b>				
BUS 4334	Business Finance I	3	0	3
BUS 4321	Consumer Credit	3	0	3
BUS 4323	Sales Development	3	0	3
BUS 4312	Marketing	3	0	3
BUS 4313	Advertising	3	0	3
	Elective	3	0	3
		<hr/>	<hr/>	<hr/>
		18	0	18
<b>Sixth Quarter</b>				
BUS 4335	Business Finance II	3	0	3
BUS 4322	Commercial Credit	3	0	3
BUS 4320	Retailing	3	0	3
BUS 2300	Business Management	3	0	3
BUS 4374	Marketing Seminar	3	0	3
		<hr/>	<hr/>	<hr/>
		15	0	15

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### Suggested Sequence Of Required Courses For Business Administration — Business Management

Course Title		Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
BUS 1400	Introduction to Business	3	2	4
BUS 1604	Principles of Accounting I	5	2	6
ENG 3304	Communications I**	3	0	3
MAT 3304	Business Arithmetic*	3	0	3
		14	4	16
<b>Second Quarter</b>				
BUS 1605	Principles of Accounting II	5	2	6
ECO 3301	American Economic History***	3	0	3
EDP 3300	Introduction to Computer Concepts	3	0	3
ENG 3305	Communications II**	3	0	3
MAT 1300	Business Mathematics*	3	0	3
		17	2	18
<b>Third Quarter</b>				
BUS 2304	Business Law I	3	0	3
ECO 3302	Labor Economics***	3	0	3
EDP 4314	Systems and Procedures	3	0	3
ENG 3306	Communications III	3	0	3
	Elective****	3	0	3
		15	0	15
<b>Fourth Quarter</b>				
BUS 2300	Business Management	3	0	3
BUS 2305	Business Law II	3	0	3
ECO 2300	Economics I	3	0	3
EDP 2306	Computer Programming I (Business)	2	2	3
SPH 1300	Oral Communications	3	0	3
BUS 3304	Business Statistics	3	0	3
		17	2	18
<b>Fifth Quarter</b>				
BUS 4334	Business Finance I	3	0	3
BUS 4321	Consumer Credit (or BUS 4322, Commercial Credit)	3	0	3
BUS 4360	Administrative Office Management I	3	0	3
BUS 4303	Supervision	3	0	3
	Electives	6	0	6
		18	0	18
<b>Sixth Quarter</b>				
PSY 4300	Applied Psychology	3	0	3
BUS 4335	Business Finance II	3	0	3
BUS 4306	Legal Environment of Business	3	0	3
BUS 4330	Personnel Management	3	0	3
BUS 3307	Management Seminar	3	0	3
		15	0	15

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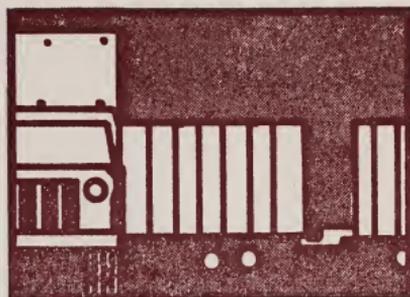


**Suggested Sequence Of Required Courses For  
Business Administration — Real Estate**

Course Title		Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
BUS 1400	Introduction to Business	3	2	4
BUS 1604	Principles of Accounting I	5	2	6
ENG 3304	Communications I**	3	0	3
MAT 3304	Business Arithmetic*	3	0	3
		<hr/>	<hr/>	<hr/>
		14	4	16
<b>Second Quarter</b>				
BUS 1605	Principles of Accounting II	5	2	6
ECO 3301	American Economic History***	3	0	3
EDP 3300	Introduction to Computer Concepts	3	0	3
ENG 3305	Communications II**	3	0	3
MAT 1300	Business Mathematics*	3	0	3
		<hr/>	<hr/>	<hr/>
		17	2	18
<b>Third Quarter</b>				
BUS 2304	Business Law I	3	0	3
BUS 3304	Business Statistics*	3	0	3
ECO 3302	Labor Economics*** (or HIS 1321)	3	0	3
EDP 4314	Systems and Procedures	3	0	3
ENG 3306	Communications III Elective****	3	0	3
		<hr/>	<hr/>	<hr/>
		18	0	18
<b>Fourth Quarter</b>				
BUS 2305	Business Law II	3	0	3
BUS 4451	Fundamentals of Real Estate Brokerage	4	0	4
EDP 2306	Computer Programming I ((Business)	2	2	3
PSY 4300	Applied Psychology	3	0	3
SPH 1300	Oral Communications	3	0	3
		<hr/>	<hr/>	<hr/>
		15	2	16
<b>Fifth Quarter</b>				
ECO 2300	Economics I***	3	0	3
BUS 4353	Real Estate Law	3	0	3
BUS 4354	Valuation of Real Estate I	3	0	3
BUS 4360	Administrative Office Management I Electives	3 6	0 0	3 6
		<hr/>	<hr/>	<hr/>
		18	0	18
<b>Sixth Quarter</b>				
BUS 4352	Real Estate Management	3	0	3
BUS 4355	Valuation of Real Estate II	3	0	3
BUS 4331	Real Estate Finance	3	0	3
BUS 4332	Real Estate Sales	3	0	3
BUS 2300	Business Management	3	0	3
		<hr/>	<hr/>	<hr/>
		15	0	15

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**Suggested Sequence  
Of Required Courses  
For Business Administration—  
Transportation Management**



		Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
BUS 1400	Introduction to Business	3	2	4
BUS 1604	Principles of Accounting I	5	2	6
ENG 3304	Communications I**	3	0	3
MAT 3304	Business Arithmetic*	3	0	3
		14	4	16
<b>Second Quarter</b>				
BUS 1605	Principles of Accounting II	5	2	6
ECO 3301	American Economic History***	3	0	3
EDP 3300	Introduction to Computer Concepts	3	0	3
ENG 3305	Communications II	3	0	3
MAT 1300	Business Mathematics*	3	0	3
		17	2	18
<b>Third Quarter</b>				
BUS 2304	Business Law I	3	0	3
BUS 3304	Business Statistics*	3	0	3
ECO 3302	Labor Economics***	3	0	3
EDP 4314	Systems and Procedures	3	0	3
ENG 3306	Communications III	3	0	3
	Elective****	3	0	3
		18	0	18
<b>Fourth Quarter</b>				
BUS 2305	Business Law II	3	0	3
ECO 2300	Economics I***	3	0	3
EDP 2306	Computer Programming I (Business)	2	2	3
PSY 4300	Applied Psychology	3	0	3
SPH 1300	Oral Communications	3	0	3
		14	2	15
<b>Fifth Quarter</b>				
BUS 4400	Motor Carrier Rates	3	2	4
BUS 4314	Transportation Law I	3	0	3
BUS 4344	Highway Transportation	3	0	3
ECO 3303	Economics of Transportation	3	0	3
	Elective	3	0	3
		15	2	16
<b>Sixth Quarter</b>				
BUS 4401	Traffic Management	3	2	4
BUS 4342	Railroad Transportation	3	0	3
BUS 4343	Traffic Claims	3	0	3
BUS 4345	Highway Transportation Management	3	0	3
BUS 2300	Business Management	3	0	3
		15	2	16

\*MAT 1504, 1505 or MAT 1514, 1515 may be taken if student has met requirements.

\*\*ENG 1304, 1305, 1306 may be taken if student has met requirements.

\*\*\*Students desiring college transfer credit may take the ECO 2300, 2301, 2304 series starting in the second quarter.

\*\*\*\*BUS 3404, Elementary Typewriting I, required of students that have not had one year of typing in high school or equivalent.

# Course Descriptions

## Course Description

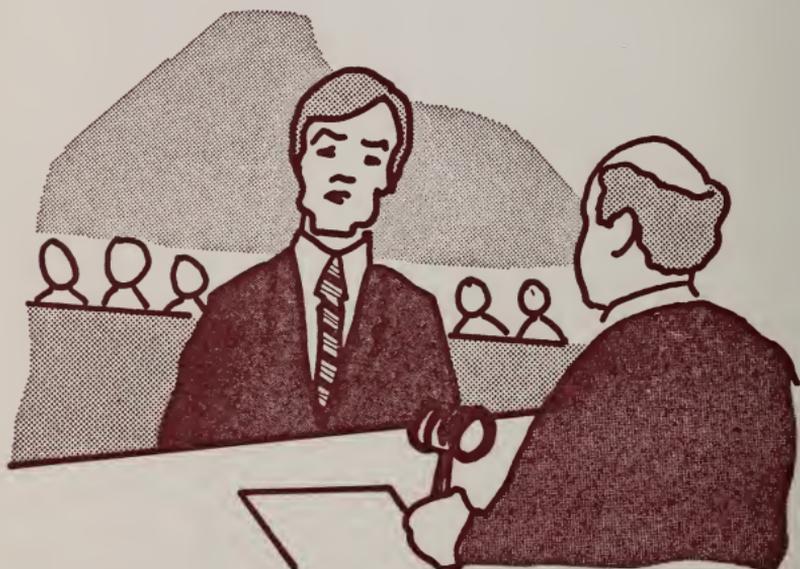
Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

**BUS 1400 Introduction to Business:** A comprehensive introduction to business operations and organization with an analysis of forms of business ownership, business functions and problems of management. (3—2) 4

**BUS 1604 Principles of Accounting I:** A study of basic accounting principles covering the complete accounting cycle for a proprietorship. Accounting for notes, interest, inventories, depreciation and payroll is covered. Preparation of worksheets and financial statements is stressed. (5—2) 6

**BUS 1605 Principles of Accounting II:** Emphasis is placed on recording, summarizing and interpreting data for management control rather than on book-keeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. The partnership and corporate forms of business are studied. P.R. BUS 1604 or consent. (5—2) 6

**BUS 2300 Business Management:** A study in depth of the principles of management. The major functions of planning, organizing, staffing, directing and controlling a firm's operations are carefully organized. Case studies and a company analysis are integral parts of the course. (3—0) 3



**BUS 2304 Business Law I:** A general course to acquaint the student with our court system and the fundamentals of business law on contracts, negotiable instruments and agency. Uniform Commercial Code is considered whenever applicable. (3—0) 3

**BUS 2305 Business Law II:** A continuing study of business laws governing sales, bailments, partnerships, corporations, insurance and property. The Uniform Commercial Code is considered wherever applicable. P.R. BUS 2304 or consent. (3—0) 3

**BUS 2306 Business Law III:** A continuing study of business law, including the Uniform Commercial Code, governing partnerships, corporations, estates and bankruptcy, government and business, and real property. P.R. BUS 2304 and BUS 2305 or consent. (3—0) 3

**BUS 3302 Principles of Risk and Insurance:** This course is an approach to the study of the principles of pure risk, risk management, and insuring techniques in the context of the managerial decision-making process. Topics include risk and the nature of insuring devices, life, health, retirement, property, and liability insuring devices; planning and integrating risk treatment programs; and insuring organizations and their functions. (3—0) 3

**BUS 3304 Business Statistics:** A study of the principal statistical methods and their application to business operations. The course deals with collection of statistical data, construction and interpretation of statistical tables and charts. Attention is given to fundamental statistical concepts and techniques. P.R. MAT 1300. (3—0) 3

**BUS 3307 Management Seminar:** A course designed to develop the students deductive and decision-making abilities in the management area. Lectures, case studies, and critical incident analysis are some of the teaching techniques used. P.R. BUS 2300 or consent of department head. (3—0) 3

**BUS 4303 Supervision:** A study of the critically important and principal concepts of modern-day first-line supervision. Emphasis is placed on the supervisor's major functions, his face-to-face relations with others, and his intellectual, emotional and ethical development. (3—0) 3

**BUS 4306 Legal Environment of Business:** A study of the powers, policies, methods and procedures used by federal and state administrative agencies in promoting and regulating business enterprises. The course includes a consideration of the constitutional and statutory limitations on these commissions and judicial review of administrative action. P.R. BUS 2305. (3—0) 3

**BUS 4309 Purchasing:** The organization of industrial and commercial purchasing, methods of procurement, purchasing policies, sources of supply and legal aspects. P.R. BUS 4312 or consent of department head. (3—0) 3

**BUS 4310 Money and Banking:** A study of the principles of commercial and central banking; monetary and income theory; monetary and fiscal policy; and international monetary relations. (3—0) 3



**BUS 4312 Marketing:** An introduction to the overall system of distributing goods and services. The course deals with marketing functions and policies, product line, brands, channels of distribution, advertising and price policies. (3-0) 3

**BUS 4313 Advertising:** A study of advertising from three different points of view: the marketing viewpoint, the communications viewpoint, and the viewpoint of the citizen who is exposed to advertising everyday to provide a better understanding of the force of advertising in our economic environment. (3-0) 3

**BUS 4314 Transportation Law I:** A thorough analysis is made of the interstate Commerce Act. The history of this Act, court cases interpreting it, and related acts affecting interstate commerce are studied. (3-0) 3

**BUS 4315 Transportation Law II:** A detailed study of the procedure of appearing and presentation of cases before the Interstate Commerce Commission. The various causes of action arising in violation or application of the law are studied. Designed to assist the student in passing the ICC practitioners examination. P.R. BUS 4314. (3-0) 3

**BUS 4320 Retailing:** A study of the role of retailing in our distribution system. Topics include the development of present retail practices, functions performed, principles governing effective operation, and managerial problems resulting from current economic and social trends. (3-0) 3

**BUS 4321 Consumer Credit:** This course is designed to provide a clear and concise understanding of consumer credit; and the management and analysis of consumer credit; business credit, government credit, and foreign credit. (3-0) 3

**BUS 4322 Commercial Credit:** This course involves an analysis of the management and control of commercial credit operations with an emphasis on methods of choosing among different sources and uses of funds. (3-0) 3

**BUS 4323 Sales Development:** An analysis of the principles and techniques of effective selling. The qualifications, training and obligations of the salesman are emphasized through sales demonstrations and interviews. (3-0) 3

**BUS 4325 Advanced Taxation:** Income tax laws and regulations are examined in detail and applied to complex situations. Federal tax litigation and procedures before local IRS authorities are reviewed. P.R. BUS 4434. (3-0) 3

**BUS 4330 Personnel Management:** An introduction to the operation of a personnel department. Emphasis is placed on the scientific management of manpower through personnel policies pertaining to recruitment, selection, placement, training, promotion, health and safety and employee services. (3-0) 3

**BUS 4331 Real Estate Finance:** A study of the sources of funds available for real estate purchasing and the various procedures involved to obtain mortgages. An analysis of the costs involved in real estate financing. (3-0) 3

**BUS 4332 Real Estate Sales:** Emphasis is placed on sales techniques and sales management. Consumer motivation is analyzed. (3-0) 3

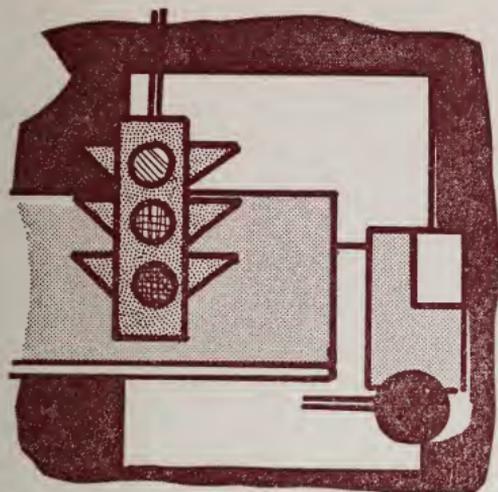
**BUS 4333 Personal Finance:** A course designed to acquaint the student with many of the financial problems that will face him during his lifetime. A detailed study is made of borrowing money, including sources and types of debt. Also included is a study of personal taxes and insurance needs. (3-0) 3

**BUS 4334 Business Finance I:** The financing of business entities with special emphasis on corporations. The various types of corporate stocks and bonds are studied and compared with alternate sources of capital. P.R. BUS 1604. (3-0) 3

**BUS 4335 Business Finance II:** A continued study of the techniques of business finance including capital budgeting, leverage and financial reporting and planning. The role of security markets is studied. P.R. BUS 4334. (3-0) 3

**BUS 4338 Accounting Problems:** Individual worksheet technique is developed by solution of assigned problems, many being taken from recent CPA examinations. Accounting principles recommended by professional accounting societies are studied. P.R. BUS 2627. (3-0) 3

**BUS 4340 Production Planning and Control:** Provides a depth of study of the managerial and technical skills involved in the planning and control of the production process in a manufacturing organization. Procedures and performances will be developed to improve the contribution to management objectives such as increased machine and labor utilization, tighter control of operations and inventory control, and to provide better customer satisfaction. (3-0) 3



**BUS 4341 Commodities of Commerce:** A study of economic geography of the principal commodities of commerce. The prime sources of raw materials and finished goods under present conditions are emphasized and an analysis of major changes as projected by industrial and commercial development is made.

(3—0) 3

**BUS 4342 Railroad Transportation:** A survey of the development, ownership, and control of railroads. Organization of the Association of American Railroads, its duties and function. Railroad systems, services, equipment, car service, per diem and interchange rules, trailer-on-flatcar and other rail-motor services. Railroad publications and their uses are also considered.

(3—0) 3

**BUS 4343 Traffic Claims:** A comprehensive analysis of rights and liabilities of common carriers, consignors and consignees, claim procedures, settlements, and prevention of loss and damage claims.

(3—0) 3

**BUS 4344 Highway Transportation:** A study of the development of the motor carrier industry, classification of highway users, types of motor carriers, types of operations and services performed; state and federal safety regulations, highway policies and "barriers"; organization and operation of a motor carrier; terminals, facilities, types of equipment and costs, insurance, financing and labor relations.

(3—0) 3

**BUS 4345 Highway Transportation Management:** An analysis of motor carrier administration including organization, management principles, and policy formulation for direction and control. Case problems are studied. P.R. BUS 4344.

(3—0) 3

**BUS 4451 Fundamentals of Real Estate Brokerage:** A general survey course to provide a basic knowledge of real estate. This includes the principles of sales, finance, brokerage, appraising, law and closure.

(4—0) 4

**BUS 4352 Real Estate Management:** A detailed coverage of property management. This includes leasing, maintenance, market analysis and zoning practices.

(3—0) 3

**BUS 4353 Real Estate Law:** This course emphasizes the legal phases and actions undertaken from the listing of the property to the closing of the escrow.

(3—0) 3

**BUS 4354 Valuation of Real Estate I (Appraisal I):** The first of two courses offered in appraisal of property.

(3—0) 3

**BUS 4355 Valuation of Real Estate II (Appraisal II):** A continuation of BUS 4354. Both courses designed to study the factors which determine the value of real property. P.R. BUS 4354.

(3—0) 3

**BUS 4360 Administrative Office Management I:** This course involves principles and actual practices in the management of the flow of information within an enterprise. The basic management functions of planning, controlling, organizing, and coordination as applied to offices, services, physical facilities, systems and procedures, work measurement and standards, and business information systems.

(3—0) 3

**BUS 4361 Administrative Office Management II:** Involved in this course are developing proper attitudes about human situations and relations in business, stressing methods of getting a job done through decision making and problem solving, investigating problems in systems analysis, mechanization and automation, work measurement and standards, cost control, forms design, office layout, and office personnel policies. (3—0) 3

**BUS 4364 Budget and Record Keeping:** The basic principles, methods and procedures for projection, preparation and operation of business budgets. Special attention is given to the involvement of individual departments and the role they play. Emphasis is placed on the necessity for accurate record keeping in order to evaluate the effectiveness of budget planning. P.R. BUS 1604. (3—0) 3

**BUS 4371 Property and Casualty Insurance:** An analysis of important property and casualty coverages available, with emphasis on the personal and business needs for property and liability insurance; and the underwriting marketing and social problems or issues pertaining to casualty or liability insurance. (3—0)

**BUS 4372 Life and Health Insurance:** A basic analysis of personal and business needs for life and health insurance, the characteristics of the various plans appropriate to meet the needs. Consideration is given to unique legal considerations important to life insurance, the impact on the needs of group life and health insurance, pensions, social security, veterans benefits, beneficiary provisions and settlement options is analyzed. (3—0) 3

**BUS 4374 Marketing Seminar:** A continuing analysis of the marketing functions with an emphasis on case study and strategical techniques used in the distribution cycle. (3—0) 3

**BUS 4394 Individual Study—Business Administration:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and V-P is required. (3—0) 3

**BUS 4400 Motor Carrier Rates:** A problem approach to the study of motor carrier rates and charges. Emphasis is placed on tariffs published by the Southern Motor Carriers Rate Conference. Consideration is also given to rail and trailer-on-flat-car rates. (3—2) 4

**BUS 4401 Traffic Management:** A study of the management of the flow of goods in commerce. The organization and duties of a traffic department, effective employment of for-hire carrier services and private transportation. Emphasis is placed on shipping, receiving, routing, warehousing, transit privileges, exports and imports, documentation, and procedure before rate and classification bureaus. (3—2) 4



**ECO 2300 Economics I:** Development of economic thought, measurement of national income, theory of national income determination, and importance of money supply and fiscal policy are included.

(3-0) 3

**ECO 2301 Economics II:** The role of the price system in society is reviewed, including how it affects the allocation of resources and the behavior of consumers and firms.

(3-0) 3

**ECO 2304 Economics III:** Economic problems and issues, including foreign trade and comparative economic systems are reviewed. The problems of poverty, ecology, housing, education, and aging along with possible solutions are discussed.

(3-0) 3

**ECO 3301 American Economic History:** A survey of American economic development from the colonial period to the present. Emphasis is given to the chronologic evolution of modern agriculture, transportation, banking and money supply, industry, domestic and foreign trade, the labor movement, and the governments role in the economy. Historical analysis of depression, prosperity and the demand for full employment.

(3-0) 3

**ECO 3302 Labor Economics:** Current labor problems; the development of labor unions; theories and the development of effective labor and wage policies. Historical and legal aspects of man's working environment are explored.

(3-0) 3

**ECO 3303 Economics of Transportation:** An introductory course emphasizing the development of our different modes of transportation (rail, water, highway, pipeline and air); the economic importance of each and the part each best plays transporting goods in commerce; the development of federal and state regulation; and coordination and integration of different modes of transport to meet the needs of our expanding economy.

(3-0) 3

**EDP 2306 Computer Programming I (Business):** A study of computer programming and use for business students. After an introduction to computer systems, students will develop program logic and write programs for solving sample business problems. Also, various packaged or prewritten programs will be examined and utilized in problem solution as applied to business data processing.

(2-2) 3

**EDP 3300 Introduction to Computer Concepts:** An introductory course in computers for the student who plans to pursue data processing as a career and for the student who desires a general non-technical knowledge of terminology and concepts. No previous knowledge or experience in data processing is required.

(3-0) 3

**EDP 4314 Systems and Procedures:** An introductory course in the principles of management systems applied to information data flows. Particular attention is given to forms flow charting, forms analysis and design and systems analysis. P.R. BUS 1604 or equivalent.

(3-0) 3

**ENG 3304 Communications I:** This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English. (3-0) 3

**ENG 3305 Communications II:** Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. ENG 3304. (3-0) 3

**ENG 3306 Communications III:** The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. ENG 3305. (3-0) 3

**HIS 1321 American History II:** The intermediate survey of the American development from 1850 to 1920. (3-0) 3

**MAT 1300 Business Mathematics:** A review of basic mathematics in business: interest and bank discounts, payroll records, taxes, retailing costs, markups and discounts, compound interest and annuities. (3-0) 3

**MAT 3304 Business Arithmetic:** A study of fundamental processes: addition, subtraction, multiplication and division of whole numbers and common and decimal fractions. The manipulation and application of per cent, essentials of algebraic operations and per cents as applied to the income statement are also studied. P.R. Satisfactory score on entrance math test. (3-0) 3

**PSY 4300 Applied Psychology:** A study of the principles of psychology which will be of assistance in the understanding of interpersonal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are employee selection, supervision, job satisfaction and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and member of the general community. (3-0) 3

**SPH 1300 Oral Communication:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3-0) 3



## Engineering Technology

Chemical  
Civil-Architectural  
Electrical-Electronics  
Electromechanical  
Mechanical

### Chemical Technology

The chemical industry of the southeastern United States involves (1) basic research, (2) development of chemical processes through pilot plant investigations, (3) chemical manufacturing, (4) sales and services and (5) laboratory analyses and testing of materials.

Leading products are in the fields of textiles, paper, fertilizer, adhesives, protective coatings, plastics and rubber.

Chemical technicians are much in demand for laboratory testing and pilot plant studies throughout the industry.

#### Description Of Curriculum

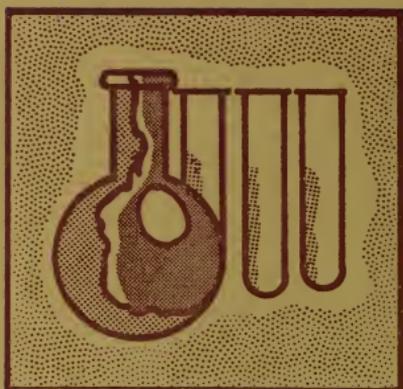
The Chemical Technology curriculum is an intensive six-quarter program of theoretical and applied chemistry. It is designed to:

1. Develop the student's knowledge and understanding of the fundamental principles and concepts of chemistry.
2. Develop laboratory manipulative skills and techniques as needed on the job.
3. Familiarize the student with commercial manufacturing process problems and the part that the technician must play in the prevention and/or solution of these problems.

A total of ten courses is included to give the student ample training in general, organic, physical and analytical chemistry. Emphasis is placed upon development of laboratory skills. The use of such modern instruments as the colorimeter, infrared spectrophotometer and gas chromatograph is taught in the final two quarters. Graduates in this curriculum receive the degree Associate in Applied Science in Chemical Technology.

A cooperative program is available to those students who wish to blend their academic work with industrial experience.





### Suggested Sequence Of Required Courses For Chemical Technology

		Hours per Week	Quarter
Course Title		Lect.	Hours Credit
<b>First Quarter</b>			
CHM 3100	Seminar	1	0 1
MAT 3504	Technical Mathematics I	5	0 5
ENG	Communications Elective	3	0 3
CHM 1504	General Chemistry I	3	4 5
	Elective	3	0 3
		<hr/>	<hr/>
		15	4 17
<b>Second Quarter</b>			
PHY 3404	Physics I: Basic Mechanics	3	2 4
CHM 3101	Seminar	1	0 1
ENG	Communications Elective	3	0 3
MAT 3505	Technical Mathematics II	5	0 5
CHM 1505	General Chemistry II	3	4 5
		<hr/>	<hr/>
		15	6 18
<b>Third Quarter</b>			
CHM 3102	Seminar	1	0 1
MAT 3506	Technical Mathematics III	5	0 5
CHM 1506	General Chemistry III and Elementary Analysis	3	4 5
PHY 3405	Physics II: Work, Energy, Power	3	2 4
		<hr/>	<hr/>
		12	6 15
<b>Fourth Quarter</b>			
	General Education Elective	3	0 3
CHM 2604	Quantitative Chemical Analysis	3	6 6
CHM 3404	Physical Chemistry	2	4 4
ENG 3306	Communications III	3	0 3
		<hr/>	<hr/>
		11	10 16
<b>Fifth Quarter</b>			
PHY 3407	Physics IV: Light, Sound and Atomic Physics	3	2 4
CHM 2614	Organic Chemistry I	4	4 6
CHM 4804	Industrial Chemistry Analysis	3	10 8
		<hr/>	<hr/>
		10	16 18
<b>Sixth Quarter</b>			
CHM 4200	Independent Laboratory Study	0	4 2
CHM 2615	Organic Chemistry II	4	4 6
CHM 4905	Optical Methods of Industrial Chemical Analysis	3	12 9
		<hr/>	<hr/>
		7	20 17

# Civil Engineering And Architectural Technology

## Civil Option

## Architectural Option

The construction industry is large and varied and provides excellent opportunities for the individual with ability and training. Depending on the organization and the size of the project, the technician may work directly with engineers or architects or he may function as a liaison between them.

Civil engineering technicians perform many necessary planning and supervisory tasks. An individual, after graduating from this program, should qualify for such jobs as instrument man, survey party chief, draftsman, foreman, expeditor, surveyor, layout man, engineering aide, inspector or construction equipment and material salesman. Upon gaining sufficient construction experience, the technician has the opportunity to advance into positions such as field engineer, estimator, job superintendent, project manager or contractor.

Architectural technicians perform many of the planning tasks necessary to communicate the architect's designs to the builder. Graduates will be competent draftsmen who will work directly with registered architects and other qualified technicians within the office in the preparation of complete and accurate working drawings, details and specifications. The technicians will be well informed on the building industry in general, the operation of an architect's office, building codes, methods and materials of construction, and contract documents. Upon gaining sufficient experience they may be involved in estimating, field observation and many other facets of architectural practice. Their advancement to positions of responsibility such as "job captain" or project manager will depend only on their own aspirations and abilities.

### Description Of Curriculum

The curriculum at Central Piedmont Community College includes both classroom and laboratory experiences with practical application to the industry. Well-qualified instructors and excellent equipment provide the student an opportunity to secure the education he needs for the many excellent positions available in this field. The degree Associate in Applied Science in Civil Engineering Technology or the degree Associate in Applied Science in Architectural Technology is awarded upon completion of the program.

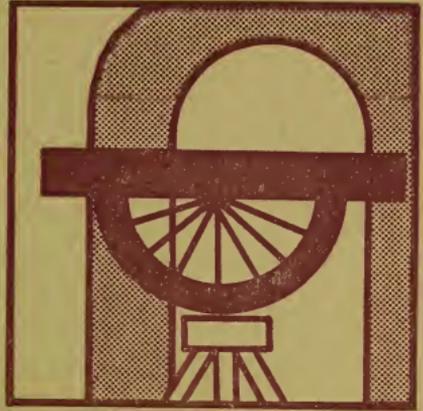




## Suggested Sequence Of Required Courses For Civil Engineering-Architectural Technology

### Civil Option

Course Title		Hours per Week Class	Week Lab.	Quarter Hours Credit
<b>First Quarter</b>				
CIV 3504	Surveying I	2	6	5
DFT 3334	Architectural Drafting I	2	2	3
MAT 3504	Technical Mathematics I	5	0	5
ENG	Communications Elective	3	0	3
CIV 3100	Introduction to Civil Engineering Technology	1	0	1
		<hr/>	<hr/>	<hr/>
		13	8	17
<b>Second Quarter</b>				
CIV 3514	Statics	4	2	5
DFT 3335	Architectural Drafting II	2	2	3
PHY 3404	Physics I: Basic Mechanics	3	2	4
MAT 3505	Technical Mathematics II	5	0	5
		<hr/>	<hr/>	<hr/>
		14	6	17
<b>Third Quarter</b>				
CIV 3505	Surveying II	2	6	5
CIV 3324	Plain Concrete	1	4	3
CIV 3404	Architectural Engineering Materials and Methods	3	2	4
CIV 3524	Strength of Materials	4	2	5
ENG	Communications Elective	3	0	3
		<hr/>	<hr/>	<hr/>
		13	14	20
<b>Fourth Quarter</b>				
CIV 4506	Surveying III	2	6	5
CIV 4427	Steel and Timber Design	2	4	4
PHY 3405	Physics II: Work, Energy, Power	3	2	4
CIV 4300	Codes, Contracts, and Specifications	2	2	3
		<hr/>	<hr/>	<hr/>
		9	14	16
<b>Fifth Quarter</b>				
CIV 4304	Construction Planning (CPM)	2	2	3
CIV 4434	Reinforced Concrete Design	2	4	4
PHY 3406	Physics III: Electricity	3	2	4
ENG 3306	Communications III	3	0	3
	General Education Elective	3	0	3
		<hr/>	<hr/>	<hr/>
		13	8	17
<b>Sixth Quarter</b>				
CIV 4324	Foundation Construction	2	2	3
CIV 4444	Construction of Roads and Pavements	2	4	4
CIV 4454	Construction Estimates and Costs	2	4	4
CIV 4404	Structural Drafting and Design	2	4	4
	General Education Elective	3	0	3
		<hr/>	<hr/>	<hr/>
		11	14	18



**Suggested Sequence Of Required  
Courses For Civil Engineering-  
Architectural Technology  
Architectural Option**

	Course Title	Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
CIV 3504	Surveying I	2	6	5
DFT 3334	Architectural Drafting I	2	2	3
MAT 3504	Technical Mathematics I	5	0	5
ENG	Communications Elective	3	0	3
ARC 3200	Introduction: History of Architecture	2	0	2
		14	8	18
<b>Second Quarter</b>				
CIV 3514	Statics	4	2	5
DFT 3335	Architectural Drafting II	2	2	3
PHY 3404	Physics I: Basic Mechanics	3	2	4
MAT 3505	Technical Mathematics II	5	0	5
		14	6	17
<b>Third Quarter</b>				
DFT 3436	Architectural Drafting III	2	4	4
CIV 3324	Plain Concrete	1	4	3
CIV 3404	Architectural Engineering Materials and Methods	3	2	4
CIV 3524	Strength of Materials	4	2	5
ENG	Communications Elective	3	0	3
		13	12	19
<b>Fourth Quarter</b>				
DFT 4437	Architectural Drafting IV	2	4	4
CIV 4427	Steel and Timber Design	2	4	4
ARC 4400	Architectural Mechanical Equipment	3	2	4
PHY 3407	Physics IV: Light, Sound, and Atomic Physics	3	2	4
CIV 4300	Codes, Contracts, and Specifications	2	2	3
		12	14	19
<b>Fifth Quarter</b>				
DFT 4438	Architectural Drafting V	2	4	4
CIV 4434	Reinforced Concrete Design	2	4	4
PHY 3406	Physics III: Electricity	3	2	4
	General Education Elective	3	0	3
		10	10	15
<b>Sixth Quarter</b>				
DFT 4539	Architectural Drafting VI	2	6	5
CIV 4454	Construction Estimates and Costs	2	4	4
ENG 3306	Communications III	3	0	3
ARC 4201	Architectural Office Practice	2	0	2
	General Education Elective	3	0	3
		12	10	17

# Electrical-Electronics Engineering Technology

## Electrical Option

## Electronics Option

The new space industry and a rapidly developing industrial society, with its resulting emphasis on automation, brings job opportunities for people who are well-grounded in electrical and electronic theory and who have knowledge of manufacturing, installing, operating and maintaining electrical and electronic equipment. The electrical technician works with many types of electrical controls and machines. Electronic technicians work with some of the above equipment as well as radar, telemetry, microwave and guidance systems, radio, TV systems, computers and specialized electronic equipment used in medicine.

### Description Of Curriculum

The program at Central Piedmont Community College provides the student with a strong background in electrical and electronic theory along with large amounts of time spent in excellently equipped laboratories. This laboratory time provides the student with an opportunity to apply theory to practical problems involving modern equipment. Supporting courses in mathematics, physics and communicative skills help prepare the students for job opportunities as technicians and engineering assistants in such areas as sales, system maintenance, research, development and modification. Electives are provided to enable the student to broaden his background to include the principles of construction wiring and/or electronic data processing. The degree Associate in Applied Science in either Electrical or Electronics Engineering Technology will be awarded upon successful completion of this curriculum. The degree to be received will be determined by the choice of optional and elective courses. The exact sequence of courses will be chosen to meet the needs of the individual student.



**Suggested Sequence Of  
Required Courses For  
Electrical-Electronics  
Engineering Technology**



Course Title	Hours per Week		Quarter
	Lect.	Lab.	Hours Credit
<b>First Quarter</b>			
ELN 3100 Electrical-Electronics Seminar	1	0	1
ELC 3514 Basic Electricity (DC)	3	4	5
ELN 3304 Electronic Instruments and Measures	1	4	3
MAT 3504 Technical Mathematics I	5	0	5
DFT 3404 Technical Drafting I	2	4	4
	<hr/>	<hr/>	<hr/>
	12	12	18
<b>Second Quarter</b>			
ELN 3101 Electrical-Electronics Seminar	1	0	1
ELC 3515 Basic Electricity (AC)	3	4	5
ELN 3404 Active Electronic Elements	3	2	4
PHY 3404 Physics I: Basic Mechanics	3	2	4
MAT 3505 Technical Mathematics II	5	0	5
	<hr/>	<hr/>	<hr/>
	15	8	19
<b>Third Quarter</b>			
ELN 3102 Electrical-Electronics Seminar	1	0	1
ELN 3717 Basic Electronic Circuits	5	4	7
PHY 3405 Physics II: Work, Energy, Power	3	2	4
ENG Communications Elective	3	0	3
General Education Elective	3	0	3
	<hr/>	<hr/>	<hr/>
	15	6	18
<b>Fourth Quarter</b>			
<b>Electronics Option</b>			
ELN 4102 Electrical-Electronics Seminar	1	0	1
ELC 4524 Electrical Machines I	3	4	5
ELN 3414 Electronic Instrumentation and Control	3	2	4
ELC 4544 Network Analysis	3	4	5
ENG Communications Elective	3	0	3
	<hr/>	<hr/>	<hr/>
	13	10	18
<b>Fifth Quarter</b>			
ELN 4103 Electrical-Electronics Seminar	1	0	1
ELN 4524 Transistor Circuit Analysis and Design	3	4	5
ELC 4404 Control Circuits	3	2	4
ENG 3306 Communications III	3	0	3
MAT Mathematics Elective	3	0	3
Specialty Elective			4
	<hr/>	<hr/>	<hr/>
			20
<b>Sixth Quarter</b>			
ELN 4104 Electrical-Electronics Seminar	1	0	1
ELC 4307 Systems Correction Procedures	1	4	3
ELN 4326 Electrical-Electronics Research Project	1	4	3
ELN 4427 Integrated Circuits	3	2	4
Specialty Elective			4
General Education Elective	3	0	3
	<hr/>	<hr/>	<hr/>
			18

## Electrical Option

Course Title		Hours per Week	Quarter Hours
		Class	Lab. Credit
<b>Fourth Quarter</b>			
ELN 4102	Electrical-Electronics Seminar	1	1
ELC 4524	Electrical Machines I	3	5
ELN 3414	Electronic Instrumentation and Control	3	4
ELC 4544	Network Analysis	3	5
ENG	Communications Elective	3	3
		<hr/>	<hr/>
		13	18
<b>Fifth Quarter</b>			
ELN 4103	Electrical-Electronics Seminar	1	1
ELN 4524	Transistor Circuit Analysis and Design	3	5
ELC 4300	Planning Electrical Installations	0	3
ELC 4404	Control Circuits	3	4
ENG 3306	Communications III	3	3
	Specialty Elective		4
		<hr/>	<hr/>
			20
<b>Sixth Quarter</b>			
ELN 4104	Electrical-Electronics Seminar	1	1
ELC 4307	Systems Correction Procedures	1	3
ELN 4326	Electrical-Electronics Research Project	1	3
ELC 4425	Electrical Machines II	2	4
	Specialty Elective		4
	General Education Elective	3	3
		<hr/>	<hr/>
			18



## Electromechanical Engineering Technology

The electromechanical technician is a specialist in the maintenance and repair of systems and their components. Opportunities also exist in the areas of design, production and sales. Electromechanical Engineering Technology is a third-generation curriculum which cuts across established fields to provide industry with people having a combination of skills. Employment opportunities include the fields of business machines, computers, servomechanisms, industrial control and data collection and communication.

### Description Of Curriculum

Electromechanical Engineering Technology includes the cross-disciplinary fields of electronics, mechanics, hydraulics, pneumatics, optics and thermics. The student is provided with a broad general background of theory and experience in the operation and maintenance of a wide variety of electromechanical devices. Graduates receive the degree Associate in Applied Science in Electromechanical Engineering Technology. Upon employment, students will generally be provided on-the-job training and specialized knowledge peculiar to the employer's product line.

**Suggested Sequence Of  
Required Courses For  
Electromechanical  
Engineering Technology**



	Course Title	Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
EMT 3100	Electromechanical Seminar	1	0	1
ELC 3514	Basic Electricity (DC)	3	4	5
ELN 3304	Electronic Instruments and Measures	1	4	3
MAT 3504	Technical Mathematics I	5	0	5
EDP 3300	Introduction to Computer Concepts	3	0	3
		13	8	17
<b>Second Quarter</b>				
EMT 3101	Electromechanical Seminar	1	0	1
ELC 3515	Basic Electricity (AC)	3	4	5
ELN 3404	Active Electronic Elements	3	2	4
PHY 3404	Physics I: Basic Mechanics	3	2	4
MAT 3505	Technical Mathematics II	5	0	5
		15	8	19
<b>Third Quarter</b>				
EMT 3102	Electromechanical Seminar	1	0	1
EMT 3424	Digital Computer Fundamentals	2	4	4
PHY 3405	Physics II: Work, Energy, Power	3	2	4
MAT 3314	Numbering Systems and Boolean Algebra	3	0	3
MEC 4424	Electromechanical Components	2	4	4
	Specialty Elective			3
		—	—	19
<b>Fourth Quarter</b>				
EMT 4100	Electromechanical Seminar	1	0	1
ELC 4524	Electrical Machines I	3	4	5
ELN 3414	Electronic Instrumentation and Control	3	2	4
EDP 4414	Digital Computer Languages	3	2	4
EMT 4404	Input-Output Devices	2	4	4
		12	12	18
<b>Fifth Quarter</b>				
EMT 4101	Electromechanical Seminar	1	0	1
ELC 4404	Control Circuits	3	2	4
EMT 4408	Memory Principles and Devices	2	4	4
ENG	Communications Elective	3	0	3
	Specialty Elective			3
	General Education Elective	3	0	3
		—	—	18
<b>Sixth Quarter</b>				
EMT 4102	Electromechanical Seminar	1	0	1
EMT 4407	Magnetic Recording Devices	2	4	4
EDP 4415	Digital Computer Systems	3	2	4
ENG	Communications Elective	3	0	3
	General Education Elective	3	0	3
	Specialty Elective			3
		—	—	18

# Mechanical Engineering Technology

## Drafting and Design Option

### Manufacturing Option

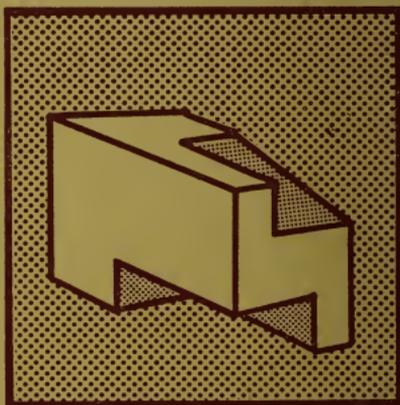
There are more than fifty-two different types of occupations in which a graduate of either of these two options of Mechanical Engineering Technology may be employed. Many of these occupations are closely related to management in industry and can provide paths to rewarding jobs.

The Mechanical Engineering Technician with a Drafting and Design option is well trained in drafting, the language of industry. He will use his knowledge to produce plans and specifications which describe the processes and procedures by which products are made and the materials from which they are made.

The Mechanical Engineering Technician with a Manufacturing option is skilled in the production efficiency areas of industry. He will work in manufacturing areas such as quality control, inventory and materials control, process planning, time and motion study, materials handling and cost estimating.

## Description Of Curriculum

The student in either the Drafting and Design Option or the Manufacturing Option of Mechanical Engineering Technology receives a well-balanced program. The instruction, consisting of both laboratory and classroom experiences, includes courses in drafting, machine processes, hydraulics and pneumatics, applied mechanics, strength of materials, metallurgy and thermodynamics.



## Suggested Sequence Of Required Courses For Mechanical Engineering Technology

### Drafting and Design Option

### Manufacturing Option

First Quarter	Course Title	Hours per Week		Quarter
		Class	Lab.	Hours Credit
MAT 3504	Technical Mathematics I	5	0	5
DFT 3404	Technical Drafting I	2	4	4
MEC 3304	Machine Processes I	2	2	3
ENG	Communications Elective	3	0	3
		<hr/> 12	<hr/> 6	<hr/> 15

**Suggested Sequence Of Required Courses For  
Mechanical Engineering Technology**

**Manufacturing Option**

**Drafting and Design Option**

Course Title		Hours per Class	Week Lab.	Quarter Hours Credit
<b>Second Quarter</b>				
MAT 3505	Technical Mathematics II	5	0	5
PHY 3404	Physics I: Basic Mechanics	3	2	4
DFT 3405	Technical Drafting II	2	4	4
MEC 3305	Machine Processes II	2	2	3
ENG	Communications Elective	3	0	3
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		15	8	19

**Third Quarter**

ENG 3306	Communications III	3	0	3
PHY 3405	Physics II: Work, Energy, Power	3	2	4
PHY 4508	Applied Mechanics	5	0	5
DFT 3406	Descriptive Geometry	2	4	4
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		13	6	16

**Fourth Quarter**

SPH 1300	Oral Communications	3	0	3
CIV 3524	Strength of Materials	4	2	5
MEC 4414	Physical Metallurgy I	3	2	4
PHY 3406	Physics III: Electricity	3	2	4
	General Education Elective	3	0	3
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		16	6	19

**Fifth Quarter**

MEC 4324	Thermodynamics	3	0	3
MEC 4434	Hydraulics and Pneumatics	3	2	4
MEC 4415	Physical Metallurgy II	3	2	4
MAT 4304	Compound Angles	3	0	3
	General Education Elective	3	0	3
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		15	4	17

**Drafting and Design Option**

**Sixth Quarter**

DFT 4604	Design Drafting	3	6	6
DFT 4414	Mechanisms	2	4	4
DFT 4404	Die Design	2	4	4
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		7	14	14

**Manufacturing Option**

**Sixth Quarter**

MEC 4404	Process planning	3	2	4
ISC 4400	Time and Motion Study	3	2	4
ISC 4404	Plant Layout and Materials Handling	3	2	4
MEC 4307	Production Planning	2	2	3
ISC 4314	Inspection and Quality Control	2	2	3
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		13	10	18

## Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Engineering Technology

**ARC 3200 Introduction: History of Architecture:** A course designed to provide fundamental knowledge of the historical styles and evaluation of architecture from the earliest times to the present day. (2—0) 2

**ARC 4201 Architectural Office Practice:** A study of the organization of a typical architectural firm and its relationship to clients, contracts, suppliers, consultants and other architects. Ethics of the profession as applicable to the technician's role in the architectural firm will be stressed. (2—0) 2

**ARC 4400 Architectural Mechanical Equipment:** A general study of heating, air conditioning, plumbing and electrical equipment, materials and symbols. The course includes building code requirements to residential and commercial structures, reading and interpretation of working drawings by mechanical engineers and coordination of mechanical and electrical features with structural and architectural designs. (3—2) 4

**CHM 1504 General Chemistry I:** A study of the fundamental postulates and laws of chemistry with emphasis upon the relationship of atomic structure to physical and chemical properties of the elements. C.R. MAT 1504 or 3504 or consent. (3—4) 5

**CHM 1505 General Chemistry II:** A study of general chemistry with emphasis upon chemical equilibria, chemical kinetics, solution stoichiometry and electrochemistry. P.R. CHM 1504 or consent. (3—4) 5

**CHM 1506 General Chemistry III and Elementary Analysis:** General chemistry including qualitative analysis with emphasis upon ionic equilibria and relating chemical properties to atomic and molecular structure. Some quantitative analysis with and without instruments will be included. P.R. CHM 1505 or consent. (3—4) 5

**CHM 2604 Quantitative Chemical Analysis:** The theory of quantitative volumetric and gravimetric determinations, with emphasis upon the principles of precipitation, neutralization and oxidation and reduction applied to unknowns. Some instrumental methods are included. P.R. CHM 1506 or consent. (3—6) 6

**CHM 2614 Organic Chemistry I:** A systematic study of the basic theories, principles and techniques of organic chemistry and their application to reactions of aliphatic and aromatic compounds and natural products. Laboratory work in purification, characterization and synthesis of organic compounds. P.R. CHM 1506 or consent. (4—4) 6

**CHM 2615 Organic Chemistry II:** Continuation of CHM 2614 with a greater emphasis in instrumental analysis in laboratory. P. R. CHM 2614 or consent. (4—4) 6

**CHM 3100 Chemistry Seminar:** A weekly seminar in which programs will be presented on topics of particular interest to students in the Chemical Technology program. Guest speakers, product demonstration, and special reports on technical changes affecting this career will be presented. Open to all interested students. (1—0) 1

**CHM 3101 Chemistry Seminar II:** A continuation of CHM 3100. (1—0) 1

**CHM 3102 Chemistry Seminar III:** A continuation of CHM 3100. (1—0) 1

**CHM 3404 Physical Chemistry:** Atomic theory, states of matter, chemical thermodynamics, molecular properties of solutions, equilibria, phase role, electrochemistry, kinetics, surface chemistry and photochemistry constitute major areas of study. P.R. CHM 1505. (2—4) 4

**CHM 4200 Independent Laboratory Study:** Individual study and research in the laboratory. Topics will be assigned by the department. (0—4) 2

**CHM 4804 Industrial Chemical Analysis:** Various methods of chromatography

are used in industrial applications. Emphasis is placed upon the use of the gas chromatograph. Ion exchange is also studied. P.R. CHM 2614, CHM 3404.

(3—10) 8

**CHM 4905 Optical Methods of Industrial Chemical Analysis:** Optical methods of industrial chemical analysis. Laboratory work centers about the use of the Colorimeter and the Infrared Spectrophotometer. P.R. CHM 4804.

**CIV 3100 Introduction: Civil Engineering Technology:** By use of outside speakers, films, and inspection trips to building and highway construction projects the student is introduced to the construction industry and to the characteristics and requirements of his future role as a construction technician.

(1—0) 1

**CIV 3324 Plain Concrete:** The study and testing of the composition and properties of concrete, including cementing agents, aggregates, admixtures and air-entrainment. Other topics include the design and proportioning of concrete mixes to obtain pre-determined strengths and properties, methods of placing and curing concrete, and standard control tests of concrete. C.R. CIV 3524.

(1—4) 3

**CIV 3404 Architectural Engineering Materials and Methods:** Study of the materials, equipment, and techniques used in the construction of buildings; investigation, including laboratory testing, of the physical and mechanical properties of structural materials. Inspection field trips will be made to construction sites. C.R. CIV 3524, CIV 3324.

(3—2) 4

**CIV 3504 Surveying I:** The theory and practice of plane surveying, including taping, differential and profile leveling, cross sections, slope staking, earth-work computations, transit, measurements of angles and directions and transit-tape surveys. C.R. MAT 3504, DFT 3334.

(2—6) 5

**CIV 3505 Surveying II:** Topics studied include traverse surveys and computations, triangulation of ordinary precision stadia, plane table, land area calculations, topographic surveys and mapping and adjustment of instruments. P.R. CIV 3504.

(2—6) 5

**CIV 3514 Statics:** Study of forces, resultants, and types of force systems; moments, equilibrium of coplanar forces by analytical and graphic methods; stresses and reactions in simple structures: equilibrium of forces in space; static and kinetic friction; center of gravity, centroids and moment of inertia. Laboratory tests involving force measurements pertaining to the theory studied. C.R. MAT 3504.

(4—2) 5

**CIV 3524 Strength of Materials:** The course emphasizes fundamental stress and strain relationship, torsion, shear and bending moments, stresses and deflection in beams, and introduction to statically indeterminate beams, columns and combined stresses. Laboratory tests involving load, stress and strain, measurements pertaining to the theory studied. P.R. CIV 3514 or PHY 4508.

(4—2) 5

**CIV 4300 Codes, Contracts and Specifications:** The basic principles and methods most significant in contract relationships, appreciation of the legal aspects of constructions work; study of the national, state and local building codes; interpreting and outlining specifications.

(2—2) 3

**CIV 4304 Construction Planning (CPM):** The analysis of construction plant layout requirements and contractor's organization for building and highway projects. Construction scheduling; project control and supervision; coordinating trades on building construction. Operations, charts, and practical application of critical path method (CPM) for construction planning, scheduling and "time-cost" determination. P.R. CIV 3404.

(2—2) 3

**CIV 4324 Foundation Construction:** Techniques of subsurface investigation; earth pressure theories for bearing capacity, lateral pressure, and slope stability. Study of principles of foundation action; design and construction practices pertaining to excavation bracing, drainage, various types of footings, pile foundations, and retaining walls. Field inspection trips. P.R. CIV 4427, CIV 4434.

(2—2) 3

**CIV 4404 Structural Drafting and Design:** The course stresses designing and detailing of the component parts of steel, timber, and reinforced concrete structures, using the latest steel and reinforced concrete handbooks. Study of conventional methods of representation, dimensioning, detailing, markings, and connections for structural steel and reinforced concrete members, composite design. P.R. CIV 4427, DFT 3335; C.R. CIV 4434.

(2—4) 4

**CIV 4427 Steel and Timber Design:** The analysis, design, and testing of steel beams, tension members, columns, and riveted, high strength bolted and welded connections; the study of industrial building roofs and bents, continuous

spans, lightweight steel construction, the use of the latest American Institute of Steel Construction Manual and specifications. Design and testing of timber members and their connections. Field inspection trips. P.R. CIV 3524.

(2-4) 4

**CIV 4434 Reinforced Concrete Design:** The analysis and design, by means of both the working stress and ultimate strength methods of the latest ACI Building Code, of reinforced concrete rectangular beams, T-beams, continuous members, columns, and floor systems composed of one-way, and two-way slabs. Use of the latest CRSI Design Handbook; introduction to principles of pre-stressed concrete. Laboratory testing and field inspection trips. P.R. CIV 3524, CIV 3324.

(2-4) 4

**CIV 4444 Construction of Roads and Pavements:** A study of construction practices of road building. Includes a study of soil types, classification systems, engineering properties of soils and laboratory work for determination of liquid limit, plastic limit, maximum and field densities, bearing strength of subgrade and base course materials. The design, construction and testing of rigid portland cement concrete and flexible asphaltic cement bituminous pavements are emphasized. Field inspection trips. P.R. CIV 4304, CIV 3524, CIV 4506.

(2-4) 4

**CIV 4454 Construction Estimates and Costs:** The interpretation of working drawings of timber, structural steel and reinforced concrete structures and highways; preparation of materials and labor quantity surveys from plans and specifications; approximate and detailed estimates of costs, bidding procedures and preparation of bids. P.R. DFT 3335.

(2-4) 4

**CIV 4506 Surveying III:** Horizontal and vertical curves; land surveying; introduction to photogrammetry and its application; building and highway construction surveying, including lines and grades for roads; foundation layout and building construction; sewer and pipe line surveys. P.R. CIV 3505.

(2-6) 5

**DFT 3404 Technical Drafting I:** An introduction to drafting and design practices and principles. The attainment of the basic skills and techniques of drafting including use of drafting equipment, lettering, freehand, orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning and noting. Methods of reproducing, filing and storing drawings are studied and the student is introduced to "working drawings."

(2-4) 4

**DFT 3405 Technical Drafting II:** A study of the application of orthographic projection principles to more complex drafting problems. Primary and secondary auxiliary views, simple and successive revolutions, sections, conventions and isometric and oblique pictorials are stressed. P.R. DFT 3404.

(2-4) 4

**DFT 3406 Descriptive Geometry:** Graphic analysis of space involving points, lines, planes, connectors and combinations of these. Practical design problems are stressed with analytical verification when applicable. Visualization is stressed on every problem. P.R. DFT 3405, MAT 3505.

(2-4) 4

**DFT 3334 Architectural Drafting I:** A course designed to provide fundamental knowledge of the principles of drafting. The basic skills and techniques of drafting are taught including use of the drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction and orthographic drawings. Solution of projection problems dealing with principles of descriptive geometry involving points, lines, planes, and connectors. The principles of isometric, oblique, and perspective drawings are introduced.

(2-2) 3

**DFT 3335 Architectural Drafting II:** Drawing of construction plans using appropriate material symbols. Sections and details will be prepared from preliminary sketches. Construction technology and nomenclature are stressed. The principles of isometric, oblique and perspective drawings are developed. Introduction of site topography. P.R. DFT 3334.

(2-2) 3

**DFT 3436 Architectural Drafting III:** An approach in depth to the study of architectural drafting which stresses the development of techniques in architectural lettering, dimensioning, freehand sketching and instrument drawing. Working drawings, including plans, elevations, sections, scale details and full-size details will be prepared from preliminary sketches. P.R. DFT 3335; C.R. CIV 3404.

(2-4) 4

**DFT 4404 Die Design:** This course is designed to give the student a thorough knowledge of die design drafting techniques, presses and their operation, the theory and formulas for cutting, drawing and forming sheet metal, and the various types of die construction and die details. P.R. DFT 3405, MEC 4415, CIV 3524.

(2-4) 4

- DFT 4414 Mechanisms:** Mathematical and drafting-room solutions of problems involving the motion principles of machine elements. A study of motions of linkages, belts, chains and gears and displacements, velocities and accelerations of points and lines within these mechanisms. Layout methods for designing cams, belts, pulleys, gears and gear trains and linkages are also studied. P.R. DFT 3405, MAT 3505, PHY 3405. (2-4) 4
- DFT 4437 Architectural Drafting IV:** Drawing of plans and details for such mechanical equipment as air conditioning, plumbing and electrical systems by using appropriate symbols and conventions. Consideration is given to co-ordination of mechanical and electrical features with structural and architectural components. P.R. DFT 3436. (2-4) 4
- DFT 4438 Architectural Drafting V:** Drawing of structural plans and details for buildings; detailing steel, timber, and reinforced concrete structural components and connections, using the latest AISC, ACI, CRSI Handbooks. P.R. DFT 4437, CIV 4427; C.R. CIV 4434. (2-4) 4
- DFT 4539 Architectural Drafting VI:** Preparation of the complete set of working drawings for the architectural structure. Preparation of millwork drawings, cabinets and built-in equipment detail drawings, and door, window and room schedules. Site and landscaping plans will be studied and drawn. Final assembly of the complete document for construction purposes will be made. P.R. DFT 4438, CIV 3504. (2-6) 5
- DFT 4604 Design Drafting:** A course in machine design which stresses the design of machine members by strength of material calculations. Principles emphasized include design sketching and drawing, layout drafting, detailing from layouts, production drawings and simplified drafting practices. Research is done in solving design problems through use of manufacturers' catalogs, manuals, periodicals and laboratory experiments. P.R. CIV 3524, MEC 4415. (3-6) 6
- EDP 3300 Introduction to Computer Concepts:** An introductory course in computers for the student who plans to pursue data processing as a career and for the student who desires a general non-technical knowledge of terminology and concepts. No previous knowledge or experience in data processing is required. (3-0) 3
- EDP 4414 Digital Computer Languages:** The student learns that the computer is only as useful and capable as the men behind it. Computer languages are seen as the key to effecting man-machine communication and to getting useful results from the computer. 1401 machine language, SPS, and Autocoder are studied in greater detail here, and other, higher level languages are introduced. This course should provide the student a basic understanding of the relationship between hardware and software and an appreciation of their contribution in the problem solving environments. P.R. EMT 3424. (3-2) 4
- EDP 4415 Digital Computer Systems:** The study of the computer as part of a system. Communication with the computer in its various applications is stressed. In the laboratory work, the student will apply what he has learned in previous courses and develop an appreciation of the capabilities of the hardware-software system. The course will (1) foster in the student a deeper understanding of the ways in which data processing systems can be utilized in modern scientific, commercial, and industrial endeavors; and (2) promote an appreciation by the student of his place in the rapidly changing world of automation and data processing systems. P.R. EDP 4414. (3-2) 4
- ELC 3514 Basic Electricity (DC):** The basic electricity subjects studied include structure of matter, electrical terminology and symbols, electron theory of current flow, magnets and magnetic fields. The course stresses a mathematical analysis of direct current resistive circuits. Ohm's Law, Kirchoff's Law and the power law are studied. Fundamental principles of inductors, capacitors and time constant circuits are introduced. C.R. MAT 3504. (3-4) 5
- ELC 3515 Basic Electricity (AC):** The study of alternating current circuits including RL, RC and RLC series and parallel combinations. Also covered are Thevenin's Theorem, Norton's Theorem, superposition and reciprocity. P.R. ELC 3514, MAT 3504. (3-4) 5
- ELC 4300 Planning Electrical Installations:** The chief objectives of the course are familiarization with the National Electric Code; a knowledge of the power requirements and typical design of industrial and commercial installations; and design of and calculations for illumination and electric heating systems. P.R. ELC 3515. (0-6) 3
- ELC 4307 Systems Correction Procedures:** A systematic analysis of complex circuitry. Topics include methods of locating and correcting malfunctions,

troubleshooting by voltage measurements, resistance measurements and waveform observations. Schematic reading and interpretation are stressed. P.R. ELN 3717. (1—4) 3

**ELC 4404 Control Circuits:** Topics studied include motor starting and speed controls, switching circuits based on Boolean algebra and open and closed loop servo systems. P.R. ELC 4524. (3—2) 4

**ELC 4425 Electrical Machines II:** A continuation of ELC 4524 for those students who feel the need to study electrical machinery in greater depth; especially generators, three phase equipment, and direct current machine characteristics. P.R. ELC 4524, ELC 4404. (2—4) 4

**ELC 4524 Electrical Machines I:** Principles and characteristics of direct and alternating current machines are studied. Operational characteristics of transformers and motors, various types of single phase and three phase motors as well as direct current machines, are stressed. P.R. ELC 3515, PHY 3405. (3—4) 5

**ELC 4544 Network Analysis:** This course is based on the theory of alternating current and voltage. Mathematical analysis is made of sine forms. Inductive reactance, capacitive reactance, and impedance characteristics of alternating current circuits are analyzed through the use of vectors. Series and parallel resonant circuit conditions are compared, and practical application of these conditions is made. P.R. ELC 3515, MAT 3505. (3—4) 5

**ELN 3100 Electrical-Electronics Seminar:** A weekly seminar in which programs will be presented on topics of particular interest to students of electronics technology. Guest lecturers, audio-visual media, product demonstrations and student research reports will be used. Open to all interested students. (1—0) 1

**ELN 3101 Electrical-Electronics Seminar:** A continuation of ELN 3100. (1—0) 1

**ELN 3102 Electrical-Electronics Seminar:** A continuation of ELN 3100. (1—0) 1

**ELN 3304 Electronic Instruments and Measures:** A study of basic service and laboratory electronic instruments with emphasis on the oscilloscope. Topics studied include theory of operation, function, tolerances and calibration. Laboratory experiences stress the application of the instruments studied. C.R. ELC 3514. (1—4) 3

**ELN 3404 Active Electronic Elements:** The characteristics of semiconductor diodes, transistors, semiconductor controlled switches, and other solid state devices are considered. The theory of emission and characteristics of kenotrons, pliotrons, phanotrons, thyratrons, ignitrons and other electron tubes are studied. Basic rectifier, amplifier and oscillator circuits are introduced. C.R. ELN 3304, ELC 3514. (3—2) 4

**ELN 3414 Electronic Instrumentation and Control:** A basic study of sensory devices for detecting such physical changes as changes in pressure, temperature, sound, light and electricity. The associated circuitry and indicating devices are also studied. P.R. ELN 3304, ELN 3404, PHY 3404. (3—2) 4

**ELN 3717 Basic Electronic Circuits:** A study of tube and semiconductor rectifier circuits, with filters, wave shaping circuits, amplifiers and oscillators. P.R. ELN 3404. (5—4) 7

**ELN 4102 Electrical-Electronics Seminar:** A continuation of ELN 3100. (1—0) 1

**ELN 4103 Electrical-Electronics Seminar:** A continuation of ELN 3100. (1—0) 1

**ELN 4104 Electrical-Electronics Seminar:** A continuation of ELN 3100. (1—0) 1

**ELN 4326 Electrical-Electronics Research Project:** Under the guidance of an instructor, a topic from an area in electrical or electronics technology which is of interest to the student is selected and explored. This topic provides opportunity for library research and laboratory application of principles studied in previous courses. P.R. ELN 4524, ELC 4404, ELN 3414, ENG 3306 (1—4) 3

**ELN 4427 Integrated Circuits:** A survey is first made of the different types of micro-electronic or integrated circuits and manufacturing techniques; then a class and laboratory study is made of practical application of both digital and linear integrated devices. P.R. ELN 3717. (3—2) 4

**ELN 4524 Transistor Circuit Analysis and Design:** A detailed study of appli-

cation, analysis and practical design of semiconductor circuits. Analyses such as hybrid equivalent circuits for transistors are covered. P.R. ELN 3717.

(3-4) 5

**EMT 3100 Electromechanical Seminar:** A weekly seminar in which there will be programs on topics of particular interest to students in the Electromechanical program. Guest lectures, product demonstrations, and special reports on technical changes affecting the occupation will be presented. Open to all students who are interested.

(1-0) 1

**EMT 3101 Electromechanical Seminar:** A continuation of EMT 3100.

(1-0) 1

**EMT 3102 Electromechanical Seminar:** A continuation of EMT 3100.

(1-0) 1

**EMT 3424 Digital Computer Fundamentals:** The fundamentals of digital computers are studied from a hardware approach. The student is first introduced to special purpose computing systems and the concept of a wired program; he then progresses to general purpose systems using stored programs. The physical realization of logical concepts is stressed. The study of peripheral equipment touches upon card readers and punches, paper tape readers and punches, printers and typewriters, and tape and disk drives. P.R. EDP 3300. (2-4) 4

**EMT 4100 Electromechanical Seminar:** A continuation of EMT 3100.

(1-0) 1

**EMT 4101 Electromechanical Seminar:** A continuation of EMT 3100.

(1-0) 1

**EMT 4102 Electromechanical Seminar:** A continuation of EMT 3100.

(1-0) 1

**EMT 4404 Input/Output Devices:** Input and output requirements of a computing system are discussed, introducing the student to types of devices in typical systems. Individual items of equipment are presented with the object of stressing mechanical, electrical, and logical principles of operation. P.R. EMT 3424, MEC 4424. (2-4) 4

**EMT 4407 Magnetic Recording Devices:** The need for storage and input/output of massive amounts of data is seen to be met by various magnetic recording media. These media are seen to be fundamentally similar except for the distinction between sequential and random access. The student will analyze and troubleshoot subassemblies in the laboratory and become familiar with the characteristics of complete operating units. Field trips will be utilized to gain firsthand experience with devices such as CRAM and the Data Cell. P.R. EMT 4408. (2-4) 4

**EMT 4408 Memory Principles and Devices:** A study of memory as a basic need in computer systems: registers, buffers, main memories, auxiliary memories. Fundamental information pertaining to addressing, access, synchronization and characteristics of the various devices is included. The course will (1) introduce memory as a dominant need in computing systems; (2) present the electronic and electromechanical devices that are used as storage devices; and (3) supplement theory with laboratory practice for reinforcement of theoretical concepts. P.R. EMT 3424. (2-4) 4

**ENG 3306 Communications III:** The fundamental concepts of English are utilized as a background for the organization and techniques of modern and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. ENG 3305. (3-0) 3

**ISC 4314 Inspection and Quality Control:** The principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance. P.R. MEC 3305. (2-2) 3

**ISC 4400 Time and Motion Study:** A course in the types of methods studies and their application. Process charts, analysis sheets, time study, work simplification, skill and effort rating are considered. (3-2) 4

**ISC 4404 Plant Layout and Materials Handling:** A practical study of factory planning with emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment are studied. The effective management of men, money and materials in a manufacturing operation is emphasized. P.R. MEC 3305, DFT 3404. (3-2) 4

**MAT 3314 Numbering Systems and Boolean Algebra:** Topics include an introduction to numbering systems with bases other than ten, transformation from one system to another, and fundamental operations in systems other than the decimal. The fundamental postulates, theorems, functions and operations of Boolean Algebra are studied and applied to computer logic designs and switching circuits. The logic of circuit design is considered rather than the electronic components used. (3—0) 3

**MAT 3504 Technical Mathematics I:** Introduction to the metric system, slide rule, fundamental algebraic operations, quadratics, functions and graphs, systems of equations, determinant and fundamental trigonometric concepts and operations. C.R. High school credit in geometry or MAT 9311. (5—0) 5

**MAT 3505 Technical Mathematics II:** A continuation of MAT 3504. Advanced algebraic and trigonometric topics including vectors and oblique triangles, complex numbers, logarithms, equations of degree greater than two, inequalities, progressions and variation. P.R. MAT 3504. (5—0) 5

**MAT 3506 Technical Mathematics III:** The fundamental concepts of analytic geometry and differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, and the integral and basic integration techniques. P.R. MAT 3505. (5—0) 5

**MAT 4304 Compound Angles:** A special study of solid geometrical figures which involves the relations of angles and sides of triangles that lie in different planes. The fundamental principles of compound angles are developed for the five basic types of solid figures, and these principles are used to obtain solutions in solid trigonometry. Practical application of theory is stressed throughout the course, with emphasis on angular hole boring, form cutting, grinding, machining of jig and fixture parts and tools and dies on angle plates. The course provides a combination of theory and practice to enable the student to find the proper general approach to compound angle problems in industry. P.R. MAT 3505. (3—0) 3

**MEC 3304 Machine Processes I:** An introductory course designed to acquaint the student with the basic hand tools, safety procedures and machine processes of our modern industry. It will include a study of measuring instruments, characteristics of metals and cutting tools. The student will become familiar with the lathe family of machine tools by performing selected operations such as turning, facing, threading, drilling, boring and reaming. (2—2) 3

**MEC 3305 Machine Processes II:** A study of advanced operations of lathe, drilling, boring and reaming machines. A study of milling machine theory and practice through study of the types of milling machines, cutters, jig and fixture devices, and the accessories used in a modern industrial plant. Safety in the operational shop is stressed. P.R. MEC 3304. (2—2) 3

**MEC 4307 Production Planning:** Day-to day plant direction including forecasting, product planning and control, scheduling, dispatching, routing and inventory control. Case histories are discussed in the classroom, and courses of corrective action are developed. P.R. MAT 3504, MEC 3305. (2—2) 3

**MEC 4324 Thermodynamics:** An introductory study of the changes in which energy is involved. Topics studied include the laws of thermodynamics, the general energy equation, the simple energy equation, and the nomenclature and understanding of various processes and cycles. P.R. PHY 3404, MAT 3505. (3—0) 3

**MEC 4404 Process Planning:** This course applies theory in process planning. The student puts all his previously gained knowledge of manufacturing processes to practical use by solving actual process-planning problems. Emphasis is placed on the proper selection of process and machinery in the light of the quantities involved, with possible alternate methods being explored. The basic concept of making the best possible product in the shortest period of time and in the most economical way is stressed throughout the course. P.R. MEC 3305, DFT 3405, MAT 3504. (3—2) 4

**MEC 4414 Physical Metallurgy I:** An introductory study of the basic properties of metals and alloys, including analysis of the structure of metals and alloys, atomic structure; nuclear structure and nuclear reactions, solid (crystalline) structure, methods of designing crystal planes, liquid and vapor phases, phase diagrams and alloy system. P.R. PHY 3404. (3—2) 4

**MEC 4415 Physical Metallurgy II:** Properties of metals and alloys, the reactions of metals, diffusion, carburizing, metal bending, homogenization, recrystallization and grain growth, age hardening, nitriding, internal oxidation, heat treatment of steel, laboratory experiments and demonstrations. P.R. MEC 4414. (3—2) 4

**MEC 4424 Electromechanical Components:** An in-depth study of motion-producing and information-handling components of business and data processing machines. The principles and concepts learned in the course on mechanisms are applied. The emphasis is on the components not studied in detail in other courses in the curriculum. In the lab, the student will study unit record equipment components and progress in the application of his knowledge to the understanding of these components as used in electronic digital computer systems. P.R. PHY 3404. (3-2) 4

**MEC 4434 Hydraulics and Pneumatics:** A course in the basic theories of hydraulic and pneumatic systems, emphasizing combinations of systems in various circuits, basic designs and functions of circuits and motors, controls, electrohydraulic servomechanisms, plumbing, filtration, accumulators and reservoirs. P.R. PHY 3405. (3-2) 4

**PHY 3404 Physics I: Basic Mechanics:** An introductory physics course designed primarily for technology majors. Introduction to the elements of classical mechanics including vectors, particle dynamics, statics, and rotary motion. C.R. MAT 3504. (3-2) 4

**PHY 3405 Physics II: Work, Energy, Power:** A continuation of PHY 3404 to include study of rigid body dynamics, machines, mechanical transmission of power, heat measurement and transfer, mechanical and thermo properties of matter, and periodic motion. A practical approach is used and applications are emphasized. P.R. PHY 3404, MAT 3504. (3-2) 4

**PHY 3406 Physics III: Electricity:** Basic theories of electricity, types of electricity, methods of producing, transmitting and transforming electricity. Electron theory, electricity by friction, electricity by magnetism, induction, voltage, amperage, resistance, horsepower, wattage and transformers are major parts of the course. P.R. PHY 3404, MAT 3505. (3-2) 4

**PHY 3407 Physics IV: Light, Sound and Atomic Physics:** A study of sound, wave motion, and an introduction to modern physics. Topics include sound energy and technical applications, illumination, principles of optical instruments, quantum mechanics, and nuclear physics. Practical aspects are emphasized. P.R. 3405, MAT 3505. (3-2) 4

**PHY 4508 Applied Mechanics:** The concepts and principles of statics and dynamics are studied. Parallel concurrent and non-concurrent force systems in coplanar and noncoplanar situations, concepts of centroids and center of gravity, moments of inertia, fundamentals of kinetics and kinematics of velocity and motion are important topics. P.R. PHY 3405, MAT 3505. (5-0) 5

**SPH 1300 Oral Communications:** Principles of effective inter-personal communications, with emphasis on communication, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3-0) 3



## Electives

- CHM 4403 Industrial Laboratory Study I:** This course integrates the academic training of the student with practical experiences in an industrial laboratory. The student will work 20 hours per week, rotating through various jobs of the laboratory on a planned program developed especially for the student. (0—20) 4
- CHM 4404 Industrial Laboratory Study II:** A continuation of CHM 4403. P.R. CHM 4403. (0—20) 4
- CHM 4405 Industrial Laboratory Study III:** A continuation of CHM 4404. P.R. CHM 4404. (0—20) 4
- CHM 4455 Textile Coloring and Testing:** A study of color application, physical testing, and product control as related to the textile field. P.R. CHM 1506. (2—4) 4
- DFT 4304 Jig and Fixture Design:** Commercial standards, principles, practices and tools of jig and fixture design are studied. The course includes individual project and design work to acquaint students with various types of jigs and fixtures and their design. P.R. DFT 3405, MEC 4414, CIV 3524. (2—2) 3
- EDP 3301 Computer Programming—Engineering Techniques:** A study of computer programming for students majoring in an engineering technician curriculum. After an introduction to computers, students will develop program logic and write computer programs for solving sample engineering problems. Also, various packaged or pre-written programs will be studied and utilized in problem solution as applied to scientific data processing. P.R. Department chairman approval. (2—2) 3
- ELC 4434 Switching Logic:** Covers the designs and simplification of combinational and sequential switching circuits with emphasis on sequential circuits. This course is a practical application of Boolean Algebra. P.R. MAT 3314. (3—2) 4
- ELN 4204 Radiotelephone Operation:** A study of FCC Rules and Regulations needed to prepare for First Class Radiotelephone License. P.R. ELN 4414. (2—0) 2
- ELN 4404 Medical Electronics:** Two distinct areas of study are combined to form this course, physiology and a detailed circuit study of biomedical electronic equipment. The physiology will include the cardiovascular, nervous and muscular systems as well as the origin and purpose of electrical potentials within the human body. Equipment circuitry study will include heart monitors, EKG monitors, spectrophotometers and other medical electronic equipment. P.R. ELN 4524. (3—2) 4
- ELN 4414 Receivers and Transmitters:** The basic principles of amplitude and frequency modulated transmitters and receivers are studied. Radio frequency and intermediate frequency amplifiers, frequency response, stage gain, distortion, noise characteristics and frequency stability are included in the course. P.R. ELN 3717. (3—2) 4
- ELN 4504 Ultra High Frequency Techniques:** This course requires the application of previously studied circuits to the broad field of ultra high frequency. Experiments are performed and theory studied on wave guides, cavity resonators and klystrons. Magnetrons, traveling wave tubes, lasers and masers are studied. P.R. ELN 3717, ELC 4544. (3—4) 5
- MAT 4507 Technical Mathematics IV:** More advanced concepts of differentiation and integration are considered. Included are derivatives of trigonometric functions, exponential and logarithmic differentiation, integration and integration techniques, expansion of functions in series, and linear differential equations. P.R. Mat 3506. (5—0) 5
- ARC 4390, CHM 4390, CIV 4390, ELN 4390, EMT 4390, MEC 4390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3—0) 3

## Dental Hygiene

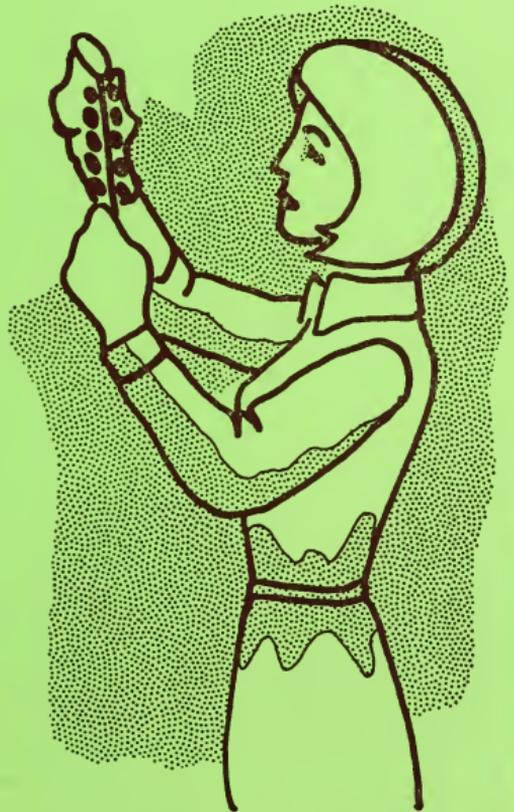
In the quest for a professional career the dental hygiene student is prepared for health services rich in human contacts. The dental hygienist achieves satisfaction from helping others and gains security in an expanding and highly regarded profession as a necessary member of the dental health team. The duties of the dental hygienist are myriad and the responsibilities are challenging.

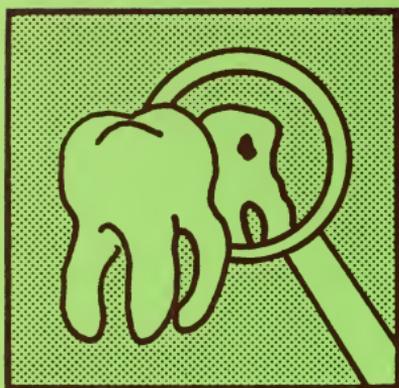
### Description Of Curriculum

The curriculum at Central Piedmont Community College includes a background of basic studies, specialized instruction and directed experience. The dental hygiene student will cultivate the judgment and skill prerequisite for providing to the public oral health care under the supervision of the dentist within the limits of the ethics and laws of the state.

The educational program consists of the theory and practice of dental hygiene, basic science and health courses and appropriate general education experiences. Dental hygiene experience is provided through the use of a dental hygiene clinic located on the College campus.

The curriculum is accredited by the American Dental Association Council on Dental Education and also satisfies the educational, professional, ethical and legal standards of the American Dental Association Council on Dental Education, the North Carolina State Department of Community Colleges, the North Carolina State Board of Dental Examiners, the American Dental Hygienists Association, the North Carolina Dental Society and the North Carolina Dental Hygienists Association. Graduates in this curriculum receive the degree Associate in Applied Science in Dental Hygiene.





### Suggested Sequence Of Required Courses For Dental Hygiene

		Course Title	Hours per Week			Quarter Hours Credit
			Class	Lab.	Clin.	
<b>First Quarter</b>						
ENG		Communications Elective	3	0	0	3
DEN	3504	Dental Anatomy I	2	6	0	5
BIO	1504	Human Anatomy and Physiology I	3	4	0	5
DEN	3214	Preventive Dentistry I	2	0	0	2
REC	1161	Self Defense and Physical Conditioning	0	0	3	1
			<hr/>	<hr/>	<hr/>	<hr/>
			10	10	3	16
<b>Second Quarter</b>						
ENG		Communications Elective	3	0	0	3
DEN	3305	Dental Anatomy II	0	6	0	3
BIO	1505	Human Anatomy and Physiology II	3	4	0	5
DEN	3215	Preventive Dentistry II	2	0	0	2
CHM	2404	Biochemistry I	3	2	0	4
REC	1161	Self Defense and Physical Conditioning	0	0	3	1
			<hr/>	<hr/>	<hr/>	<hr/>
			11	12	3	18
<b>Third Quarter</b>						
ENG		Communications Elective	3	0	0	3
BIO	1503	General Bacteriology	3	4	0	5
CHM	2405	Biochemistry II	3	2	0	4
SPH	1300	Oral Communications	3	0	0	3
DEN	3324	Dental Hygiene I	1	0	6	3
REC	1161	Self Defense and Physical Conditioning	0	0	3	1
			<hr/>	<hr/>	<hr/>	<hr/>
			13	6	9	19
<b>Fourth Quarter</b>						
DEN	4200	Office Emergencies	2	0	0	2
DEN	4500	Dental Materials	3	4	0	5
DEN	4216	Preventive Dentistry III	2	0	0	2
DEN	4425	Dental Hygiene II	0	0	12	4
DEN	4201	Roentgenology	2	0	0	2
*HED	1204	First Aid I	2	0	0	2
			<hr/>	<hr/>	<hr/>	<hr/>
			11	4	12	17
<b>Fifth Quarter</b>						
DEN	4204	Pharmacology	2	0	0	2
DEN	4526	Dental Hygiene III	0	0	15	5
DEN	4317	Preventive Dentistry IV	3	0	0	3
DEN	4504	Embryology and Oral Histology	4	2	0	5
DEN	4304	Pathology	3	0	0	3
			<hr/>	<hr/>	<hr/>	<hr/>
			12	2	15	18
<b>Sixth Quarter</b>						
PSY	2504	General Psychology	5	0	0	5
DEN	4214	Head and Neck Anatomy	2	0	0	2
BIO	2304	Human Nutrition	3	0	0	3
DEN	4527	Dental Hygiene IV	0	0	15	5
			<hr/>	<hr/>	<hr/>	<hr/>
			10	0	15	15

Seventh Quarter	Course Title	Hours per Week			Quarter
		Class	Lab.	Clin.	Hours Credit
PSY	Psychology Elective	5	0	0	5
DEN 4628	Dental Hygiene V	0	0	18	6
DEN 4314	Practice Administration	3	0	0	3
SOC 2514	Introduction to Sociology	5	0	0	5
		<hr/>	<hr/>	<hr/>	<hr/>
		13	0	18	19

### Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture, clinic and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Dental Hygiene

**BIO 1503 General Bacteriology (Microbiology):** An introductory course in general bacteriology with a survey of microscopical plant and animal forms with emphasis upon the morphology, physiology and ecology of bacteria. The nature and activities of common microorganisms of humans, soil, water, food and milk. (3-4-0) 5

**BIO 1504 Human Anatomy and Physiology I:** A study of the structure and normal functions of the human body and its systems with emphasis upon the interrelated functions of various parts and systemic processes in the development of basic physiological principles. (3-4-0) 5

**BIO 1505 Human Anatomy and Physiology II:** A continuation of BIO 1504. P.R. BIO 1504 or consent. (3-4-0) 5

**BIO 2304 Human Nutrition:** The basic principles of human nutrition in relation to health and disease. P.R. CHM 2405 or consent. (3-0-0) 3

**CHM 2404 Biochemistry I:** A basic course dealing with the inorganic and organic chemistry principles important to the chemistry of biological substances. P.R. High school chemistry or consent. (3-2-0) 4

**CHM 2405 Biochemistry II:** A systematic treatment of the principles of biochemistry as applied to the biological sciences and in particular to the health sciences. P.R. CHM 2404 or consent. (3-2-0) 4

**DEN 3214 Preventive Dentistry I:** The preservation and improvement of health in the community through improving personal habits and conditions of the individual and community. This includes emphasis upon the problems of individual health through an analysis of the various forces which affect the human organism, and the application of scientific facts and principles to these forces. (2-0-0) 2

**DEN 3215 Preventive Dentistry II:** A survey of the theory and practice of preventive dentistry with emphasis upon the principles and problems of community health. P.R. DEN 3214. (2-0-0) 2

**DEN 3305 Dental Anatomy II:** A continuation of DEN 3504 with study given to structure, eruption data and comparative dental anatomy of deciduous teeth. A specifically detailed study of occlusion and the manual carving of teeth in wax are also included. P.R. DEN 3504. (0-6-0) 3

**DEN 3324 Dental Hygiene I:** A study of the techniques of oral prophylaxis as performed within legal limits by the dental hygienist. Clinical practice upon other students and manikins sufficient to render the student competent to perform dental prophylaxis is included. A study is made of the factors which contribute to a healthy condition of the mouth with special attention given to the measures employed to arrest dental caries and adjacent tissue degeneration. The course includes chairside instruction in the dental health of the patient. P.R. DEN 3305, DEN 3214. (1-0-6) 3

**DEN 3504 Dental Anatomy I:** Structural formation and anatomy of the teeth, eruption data, and gross structure of supporting tissues with emphasis on comparative anatomy. Attention is given to the reproduction of tooth forms by drawing and carving. (2-6-0) 5

**DEN 4200 Office Emergencies:** Enumeration, description, symptoms and treatment of the various crises that could arise in the dental office. Included are detailed explanations of the more common emergencies and demonstrations of methods that may be used in the treatment. (2-0-0) 2

**DEN 4201 Roentgenology:** A study of the theories and methods for exposing

and processing roentgenograms. Sufficient clinical practice methods included in the program to render the student competent to perform these tasks.

- (2-0-0) 2
- DEN 4204 Pharmacology:** A study of drugs by groups, with special consideration of those used in dentistry, including physical and chemical properties, dosage and therapeutic effects. P.R. BIO 1505, CHM 2405. (2-0-0) 2
- DEN 4214 Head and Neck Anatomy:** A detailed study of the musculature, blood and nerve supply of the head and neck, reviewing the bones, landmarks, sinuses and foramina of the skull. P.R. BIO 1505. (2-0-0) 2
- DEN 4216 Preventive Dentistry III:** A continuation of Preventive Dentistry II. This course describes the various stages of prevention with explanation of the manner in which dentists can encounter any stage and practice prevention. Stress is placed on the periodontal aspect of prevention. P.R. DEN 3215. (2-0-0) 2
- DEN 4304 Pathology:** An introduction to general pathology, with consideration of the more common diseases affecting the human body. The clinical pathology of the diseases affecting teeth and their supporting structures, including consideration of oral manifestations of selected systemic disturbances, is studied. P.R. DEN 4504. (3-0-0) 3
- DEN 4314 Practice Administration:** The study of the correct management of a dental practice. It is stressed that dentistry is not only a profession but also a business which concerns itself with right relations with the patient, with other dentists and physicians and with the keeping of adequate service and financial records. The importance of personal and public relations, economics, and community and social relations is included. Special emphasis is placed upon the ethics and jurisprudence concerned in a dental practice. (3-0-0) 3
- DEN 4317 Preventive Dentistry IV:** Methods and materials used in teaching dental health in schools, in public health institutions, in industry and in dental practice; uses of statistical, visual and auditory aids; records and reports. P.R. Fourth quarter completion. (3-0-0) 3
- DEN 4425 Dental Hygiene II:** A continuation of Dental Hygiene I. P.R. DEN 3324. (0-0-12) 4
- DEN 4500 Dental Materials:** A study of the composition and source of materials employed in dentistry and their behavior under various treatments. The dental hygiene student learns through lectures, demonstrations and laboratory exercises to identify and prepare these materials for any of the routine dental procedures in the general practice of dentistry and in the specialties of the dental profession. (3-4-0) 5
- DEN 4504 Embryology and Oral Histology:** An introductory study of cells, tissues, and organic structures with particular reference to the teeth and oral structures. The use of the microscope and the examination of slides and tissues are included. P.R. BIO 1504, 1505, CHM 2405. (4-2-0) 5
- DEN 4526 Dental Hygiene III:** A continuation of Dental Hygiene II. P.R. DEN 4425. (0-0-15) 5
- DEN 4527 Dental Hygiene IV:** A continuation of Dental Hygiene III. P.R. Den 4526. (0-0-15) 5
- DEN 4628 Dental Hygiene V:** A continuation of Dental Hygiene IV. P.R. DEN 4527. (0-0-18) 6
- HED 1204 First Aid I:** The purpose of first aid training is to acquire knowledge and skill for the emergency care of the sick and injured until a physician arrives, and to create an active interest in the prevention of accidents through the elimination of causes. The standard and advanced certificate will be awarded upon successful completion of the course. (2-0-0) 2
- PSY 2504 General Psychology:** A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements and theories of psychology. (5-0-0) 5
- REC 1161 Self Defense and Physical Conditioning:** An introduction to the art of self defense which includes techniques used in Judo, Ju Jitsu and Karate. Exercises designed to improve coordination and physical conditioning. (Credit cumulative not to exceed 3 quarter hours.) (0-0-3) 1
- SOC 2514 Introduction to Sociology:** An analysis of the society and culture dealing with social organization, control, institutions, stratification and social change. (5-0-0) 5
- SPH 1300 Oral Communications:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3-0-0) 3
- DEN 4390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3-0-0) 3

# Electronic Data Processing

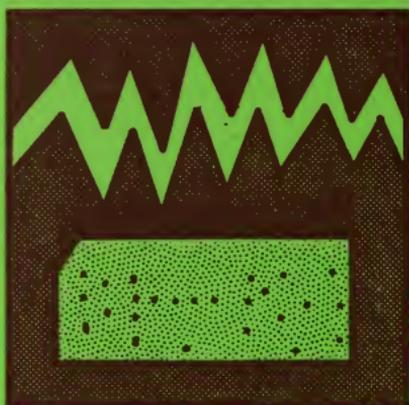
## Business Data Processing

The Electronic Data Processing Department offers the degree Associate in Applied Science in Business Data Processing. The Business Data Processing curriculum prepares a graduate to seek work on an entry level basis as a business application programmer.

### Description Of Curriculum

A graduate of the Business Data Processing curriculum has a series of courses in computer concepts, data processing fundamentals, programming, control systems, electronic data processing applications, fundamentals of systems analysis and design, business, accounting, English and mathematics. When these courses are linked with several years experience as a business application programmer after graduation, career paths in business programming, systems analyst, and management could be available for a graduate of this program. It's possible that initial employment could involve systems analysis and design work as a part of the programmer's responsibilities.





## Suggested Sequence Of Required Courses For Business Data Processing

Course Title		Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
EDP 3300	Introduction to Computer Concepts	3	0	3
EDP 3314	Computer Language I	2	2	3
EDP 3310	Data Processing Fundamentals	2	2	3
MAT 3504	Technical Mathematics I	5	0	5
ENG 3304	Communications I	3	0	3
EDP 3100	Business Data Processing Seminar	1	0	1
		16	4	18
<b>Second Quarter</b>				
EDP 3415	Computer Language II	2	4	4
MAT 3505	Technical Mathematics II	5	0	5
ENG 3305	Communications II	3	0	3
BUS 1604	Principles of Accounting I	5	2	6
		15	6	18
<b>Third Quarter</b>				
ENG 3306	Communications III	3	0	3
BUS 1605	Principles of Accounting II	5	2	6
EDP 4334	Computer Systems I	2	2	3
EDP 4314	Systems and Procedures	3	0	3
EDP 4304	COBOL Programming	2	2	3
		15	6	18
<b>Fourth Quarter</b>				
EDP 4335	Computer Systems II	2	2	3
EDP 4417	Data Processing Applications I	2	4	4
MAT 2514	Statistics I	5	0	5
BUS	Business Electives			6
				18
<b>Fifth Quarter</b>				
EDP 4418	Data Processing Applications II	2	4	4
EDP 3404	Assembly Language	2	4	4
ECO 2300	Economics	3	0	3
BUS	Business Electives			6
				17
<b>Sixth Quarter</b>				
EDP 4524	Application Project	1	8	5
EDP 4315	Applied Business Systems	3	0	3
EDP 4100	Business Data Processing Seminar	1	0	1
SPH 1300	Oral Communications	3	0	3
		8	8	12

## Course Descriptions

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite.

### Business Data Processing

**BUS 1604 Principles of Accounting I:** Introductory accounting principles designed to provide an understanding of accounting data. Accumulating, summarizing, analyzing, and reporting information about service and mercantile enterprises are emphasized. Individual ownerships and partnerships are the business organizations stressed. Also included is a study of payrolls and payroll taxes. (5-2) 6

**BUS 1605 Principles of Accounting II:** Emphasis is placed on recording, summarizing and interpreting data for management control rather than on book-keeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. The corporate form of business is studied. P.R. BUS 1604 or consent. (5-2) 6

**ECO 2300 Economics I:** Basic economics with attention to control problems of price, competition and money; supply and demand; business organization; firm and family income; labor and industrial relations; government and the economy; gross national product; relationship of income to expenditures; business cycles. (3-0) 3

**EDP 3100 Business Data Processing Seminar:** A weekly seminar in which programs will be presented which are of particular interest to students of Business Data Processing. Guest lecturers, product demonstrations and special reports on technical changes affecting the occupation will be presented. Open to all interested. (1-0) 1

**EDP 3300 Introduction to Computer Concepts:** An introductory course in computers for the student who plans to pursue data processing as a career and for the student who desires a general non-technical knowledge of terminology and concepts. No previous knowledge or experience in data processing is required. (3-0) 3

**EDP 3310 Data Processing Fundamentals:** A basic introductory course in the fundamental principles of data collection, recording, interpreting, and processing data. Emphasis is placed in input/output devices, data handling equipment and the utilization of unit record equipment. (2-2) 3

**EDP 3314 Computer Language I:** A fundamental course in problem logic and computer programming. Flowcharting techniques are studied and applied in solving problems. A compiler language structure, statements, and programming methods and techniques are studied. The students will develop program logic and write computer programs for solving sample problems. (2-2) 3

**EDP 3404 Assembly Language:** The study of symbolic computer languages with emphasis on a particular example of such a language. The student will develop program logic and write programs using assembly language to resolve appropriate assigned problems. P.R. EDP 3314 or consent. (2-4) 4

**EDP 3415 Computer Language II:** This course is designed to provide extensive training in programming using a compiler language. The language structure, statements, and programming methods and techniques are studied. The students will develop logic and write programs for solving sample problems. P.R. EDP 3314 or consent. (2-4) 4

**EDP 4100 Business Data Processing Seminar:** A continuation of EDP 3100. (1-0) 1

**EDP 4304 COBOL Programming:** A course designed to teach the COBOL Language assuming the student has already developed skills in programming logic and techniques. COBOL programs will be written and executed. P.R. EDP 3415 or consent. (2-2) 3

**EDP 4314 Systems and Procedures:** An introductory course in the principles of management systems applied to information data flows. Particular attention is given to forms flowcharting, forms analysis and design and systems analysis. P.R. BUS 1604 or equivalent. (3-0) 3

**EDP 4315 Applied Business Systems:** A continuation of management systems applied to information data flow. Practical work in systems flowcharting and analysis is implemented. The conduction of feasibility studies, the preparation and maintenance of standard practice, policies and organization manuals, and computer application are stressed. P.R. EDP 4314 or consent. (3-0) 3

**EDP 4334 Computer Systems I:** A study of computer systems involving such concepts of architecture and/or programming as file devices, file organization,

job control language, channels, interrupts, and operating systems. The students will write and document application type programs illustrating concepts discussed where applicable. P.R. EDP 3415 or consent. (2-2) 3

**EDP 4335 Computer Systems II:** A study of computer systems involving such concepts of architecture and/or programming for file organization and processing, multiprogramming, teleprocessing, JCL, operating systems, libraries, and utility programs. The students will write and document application type programs illustrating concepts discussed where applicable. P.R. EDP 4334. (2-2) 3

**EDP 4417 Data Processing Applications I:** This course is designed to provide the student with sufficient knowledge in computer methodology to permit the use of computers in business. Emphasis will center around the computer environment with an in-depth study of the integration of the computer within business applications. P.R. EDP 3415 or consent. (2-4) 4

**EDP 4418 Data Processing Applications II:** This course emphasizes the preparation and utilization of operations data used in a typical business. These problems involving systems established for collecting the data, and generating information for organizational units are studied. Audit trails enabling the tracing of transactions back to the original source of forward to the final report are analyzed. Simulated data is used to demonstrate programming techniques required in processing management information. A study of library programs for various business applications are included in this course. P.R. EDP 4417, BUS 1604 or consent. (2-4) 4

**EDP 4524 Application Project:** The work of the student during this quarter gives him an opportunity to initiate and carry out a complete project. This course places the responsibility upon the student to solve a significant problem with a minimum of assistance from the instructor. P.R. Consent. (1-8) 5

**ENG 3304 Communications I:** This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English. (3-0) 3

**ENG 3305 Communications II:** Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. ENG 3304. (3-0) 3

**ENG 3306 Communications III:** The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. ENG 3305. (3-0) 3

**MAT 2514 Statistics I:** The basic ideas of statistics and probability are introduced by finite sample spaces. Some of the more specific topics to be included are: Data organization, analysis of data, normal distribution, random sampling, hypothesis testing, student's distribution, linear regression and correlation, and time series. P.R. MAT 3505 or MAT 1505 or consent. (5-0) 5

**MAT 3504 Technical Mathematics I:** Introduction to metric system, slide rule, fundamental algebraic operations, quadratics, functioning and graphs, systems of equations, determinant and fundamental trigonometric concepts and operations. C.R. High school credit in geometry or MAT 9311. (5-0) 5

**MAT 3505 Technical Mathematics II:** A continuation of MAT 3504. Advanced algebraic and trigonometric topics including vectors and oblique triangles, complex numbers, logarithms, equations of degree greater than two, inequalities, progressions and variations. P.R. MAT 3504. (5-0) 5

**SPH 1300 Oral Communications:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3-0) 3

## Electives

**EDP 4337 Computer Language Survey—Scientific:** A study of various scientific computer languages. Students will write and execute basic programs in the computer language being studied. (2-2) 3

**EDP 4344 RPG Programming:** A course designed to teach the RPG Language assuming the student has already developed skills in programming logic and techniques. P.R. Department Chairman approval. (1-4) 3

**EDP 4424 Statistical Programming Applications:** The effective use of computers in the solution of statistical problems. This course provides the student with a knowledge of problem analysis and programming techniques as applied in statistics. P.R. MAT 2514, EDP 3415 or consent. (2-4) 4

**EDP 4434 Introduction to Operations Research:** Mathematical models effective in management planning, scheduling and control are studied. The student investigates problems applicable to linear programming models, critical path, simulation, and queuing theory. The computer will be used for problem solution using available library programs. P.R. MAT 3505, MAT 2514, EDP 3314 or consent. (3-2) 4

**EDP 4390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3-0) 3

## Secretarial Science

Executive Secretary

Legal Secretary

Medical Secretary

Executive Secretary

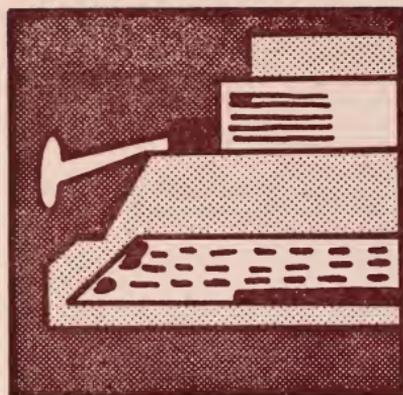
Secretaries are valuable to business, industry, government and the professions. The demand for good secretaries far exceeds the supply; thus, education in this occupational field provides many opportunities to work in pleasant and attractive surroundings on interesting things for appreciative people.

The private secretary is the boss's right hand and must bring to the position, along with basic skills of shorthand, typing and English, an understanding of office procedure, accounting, human relations and the place of business and industry in the American economic system.

### Description Of Curriculum

The degree of Associate in Applied Science in Executive Secretarial Science will be awarded upon successful completion of this curriculum. The program of studies provides for classes in shorthand, typing, English, business correspondence, business law, and related areas.





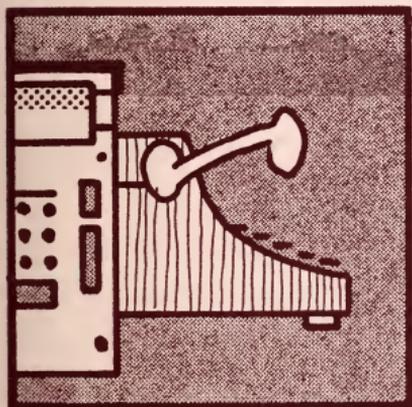
### Suggested Sequence Of Required Courses For Executive Secretary

Course Title		Hours per Week		Quarter
First Quarter		Class	Lab.	Hours Credit
BUS 1400	Introduction to Business	3	2	4
ENG 3304	Communications I*	3	0	3
BUS 3404	Elementary Typewriting I	3	2	4
MAT 3304	Business Arithmetic	3	0	3
BUS 3414	Shorthand I	3	2	4
		<hr/> 15	<hr/> 6	<hr/> 18
<b>Second Quarter</b>				
ECO 3301	American Economic History	3	0	3
ENG 3305	Communications II*	3	0	3
BUS 3405	Elementary Typewriting II	3	2	4
MAT 1300	Business Mathematics	3	0	3
BUS 3415	Shorthand II	3	2	4
		<hr/> 15	<hr/> 4	<hr/> 17
<b>Third Quarter</b>				
ENG 4304	Business Communications	3	0	3
BUS 3406	Intermediate Typewriting I	3	2	4
BUS 3416	Shorthand III	3	2	4
BUS 3600	Secretarial Accounting**	5	2	6
		<hr/> 14	<hr/> 6	<hr/> 17
<b>Fourth Quarter</b>				
BUS 4417	Dictation and Transcription I	3	2	4
BUS 4407	Intermediate Typewriting II	3	2	4
BUS 4370	Filing	3	0	3
BUS 2304	Business Law I	3	0	3
PSY 3300	Personality Development	3	0	3
		<hr/> 15	<hr/> 4	<hr/> 17
<b>Fifth Quarter</b>				
BUS 4300	Office Machines	2	2	3
BUS 4418	Dictation and Transcription II	3	2	4
BUS 4424	Advanced Executive Typewriting	3	2	4
SPH 1300	Oral Communications	3	0	3
PSY 4300	Applied Psychology			
	or			
BUS 4360	Administrative Office Management I	3	0	3
		<hr/> 14	<hr/> 6	<hr/> 17

Sixth Quarter	Course Title	Hours per Week		Quarter
		Class	Lab.	Hours Credit
BUS 4301	Secretarial Procedures	3	0	3
BUS 4419	Dictation and Transcription III	3	2	4
BUS 4304	Advanced Office Machines	2	2	3
EDP 3310	Data Processing Fundamentals	2	2	3
BUS 4100	Secretarial Seminar	0	2	1
	Elective	3	0	3
		<hr/> 13	<hr/> 8	<hr/> 17

\*Students desiring transfer credit may take ENG 1304 and ENG 1305.

\*\*Students desiring transfer credit may take BUS 1604, Principles of Accounting I.



### Legal Secretary

The legal secretary is an essential employee in any law office, and well qualified legal secretaries are in constant demand. It is the purpose of this curriculum, therefore, to provide a training program that will enable our graduates to meet the specialized needs of the legal profession.

The duties of a legal secretary may consist of filing, taking dictation, transcribing letters and legal documents, greeting clients and other office callers, screening telephone calls,

and scheduling appointments. The legal secretary needs to have not only the usual secretarial skills but also knowledge of legal terminology and procedures.

Opportunities for the graduate exist in law offices, corporate legal departments, banks, trust companies, various governmental agencies, and many other firms.

### Description Of Curriculum

The Legal Secretarial curriculum is designed to prepare the student for a variety of secretarial positions in the legal profession. Courses in typing, dictation, transcription, filing, and office machines are offered. Training in these secretarial skills is supplemented by related courses in business law, legal terminology, secretarial procedures, mathematics, and accounting. The degree Associate in Applied Science in Legal Secretarial Science will be awarded upon successful completion of the curriculum.



### Suggested Sequence Of Required Courses For Legal Secretary

Course Title		Hours per Week		Quarter
First Quarter		Class	Lab.	Hours Credit
BUS 1400	Introduction to Business	3	2	4
BUS 3304	Communications I*	3	0	3
BUS 3404	Elementary Typewriting I	3	2	4
MAT 3304	Business Arithmetic	3	0	3
BUS 3414	Shorthand I	3	2	4
		<hr/>	<hr/>	<hr/>
		15	6	18
<b>Second Quarter</b>				
ENG 3305	Communications II*	3	0	3
BUS 3405	Elementary Typewriting II	3	2	4
PSY 3300	Personality Development	3	0	3
MAT 1300	Business Mathematics	3	0	3
BUS 3415	Shorthand II	3	2	4
		<hr/>	<hr/>	<hr/>
		15	4	17
<b>Third Quarter</b>				
BUS 3406	Intermediate Typewriting I	3	2	4
BUS 3416	Shorthand III	3	2	4
ENG 4304	Business Communications	3	0	3
BUS 3301	Legal Terminology & Vocabulary	3	0	3
BUS 4370	Filing	3	0	3
		<hr/>	<hr/>	<hr/>
		15	4	17
<b>Fourth Quarter</b>				
BUS 4407	Intermediate Typewriting II	3	2	4
BUS 2304	Business Law I	3	0	3
BUS 4417	Dictation & Transcription I	3	2	4
BUS 3600	Secretarial Accounting**	5	2	6
		<hr/>	<hr/>	<hr/>
		14	6	17
<b>Fifth Quarter</b>				
BUS 4414	Advanced Legal Typewriting	3	2	4
BUS 2305	Business Law II	3	0	3
BUS 4300	Office Machines	2	2	3
BUS 4448	Legal Dictation & Transcription	3	2	4
SPH 1300	Oral Communications	3	0	3
		<hr/>	<hr/>	<hr/>
		14	6	17

Sixth Quarter	Course Title	Hours per Week Class	Week Lab.	Quarter Hours Credit
BUS 4301	Secretarial Procedures	3	0	3
BUS 4306	Legal Environment of Business	3	0	3
BUS 4360	Administrative Office Management I or	3	0	3
PSY 4300	Applied Psychology			
BUS 4449	Legal Dictation and Transcription II	3	2	4
BUS 4304	Advanced Office Machines	2	2	3
		<hr/> 14	<hr/> 4	<hr/> 16

\*Students desiring transfer credit may take ENG 1304 and ENG 1305.

\*\*Students desiring transfer credit may take BUS 1604, Principles of Accounting I.

### Medical Secretary

The demand for well qualified medical secretaries in an ever-expanding medical profession is becoming acute. The purpose of this curriculum is to outline a training program that will provide specialized training in the accepted secretarial procedures required by the medical profession. The duties of a medical secretary may consist of filing, taking dictation, transcribing letters, memoranda and reports, meeting office callers, screening telephone calls and scheduling appointments. The graduate may enter a secretarial position in physicians' offices, private and public hospitals, public health agencies, and drug and pharmaceutical companies.



### Description Of Curriculum

The Medical Secretary curriculum is designed to offer the student the necessary secretarial skills for employment in medical or health-related agencies. The graduate will have a knowledge of medical terminology and skills in typing, taking dictation and accurate transcription. Special training in secretarial subjects will be supplemented by related courses in mathematics, accounting and personality development. The degree Associate in Applied Science in Medical Secretarial Science will be awarded upon successful completion of the curriculum.



### Suggested Sequence Of Required Courses For Medical Secretary

Course Title		Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
BUS 1400	Introduction to Business	3	2	4
ENG 3304	Communications I*	3	0	3
BUS 3404	Elementary Typewriting I	3	2	4
MAT 3304	Business Arithmetic	3	0	3
BUS 3414	Shorthand I	3	2	4
		15	6	18
<b>Second Quarter</b>				
BUS 4370	Filing	3	0	3
ENG 3305	Communications II*	3	0	3
BUS 3405	Elementary Typewriting II	3	2	4
MAT 1300	Business Mathematics	3	0	3
BUS 3415	Shorthand II	3	2	4
		15	4	17
<b>Third Quarter</b>				
ENG 4304	Business Communications	3	0	3
BUS 3406	Intermediate Typewriting I	3	2	4
BUS 3416	Shorthand III	3	2	4
BUS 3204	Medical Terminology and Vocabulary I	1	2	2
BIO 3500	Basic Health Science	3	4	5
		13	10	18
<b>Fourth Quarter</b>				
BUS 4205	Medical Terminology and Vocabulary II	1	2	2
BUS 4407	Intermediate Typewriting II	3	2	4
BUS 4300	Office Machines	2	2	3
PSY 3300	Personality Development	3	0	3
BUS 4417	Dictation and Transcription I	3	2	4
		12	8	16
<b>Fifth Quarter</b>				
BUS 4454	Advanced Medical Typewriting	3	2	4
BUS 4304	Advanced Office Machines	2	2	3
BUS 4406	Medical Dictation and Transcription	3	2	4
BUS 4302	Medical Ethics and Law	3	0	3
EDP 3201	Automation Survey in Medical Facilities	2	0	2
		13	6	16
<b>Sixth Quarter</b>				
SPH 1300	Oral Communication	3	0	3
BUS 4301	Secretarial Procedures	3	0	3
BUS 4305	Medical Transcription	2	2	3
PSY 4300	Applied Psychology			
	or			
ECO 3301	American Economic History	3	0	3
BUS 5610	Medical Accounting	5	2	6
		16	4	18

\*Students desiring transfer credit may take ENG 1304 and ENG 1305.

## COURSE DESCRIPTIONS

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

**BIO 3500 Basic Health Science:** This course is designed to give the student an understanding of basic science principles and their relationships to health. The course includes study of the structure and function of the human body, principles of food and nutrition and selected principles of microbiology. (3—4) 5

**BUS 1400 Introduction to Business:** A comprehensive introduction to business operations and organization with an analysis of forms of business ownership, business functions and problems of management. (3—2) 4

**BUS 1604 Principles of Accounting I:** A study of basic accounting principles covering the complete accounting cycle for a proprietorship. Accounting for notes, interest, inventories, depreciation and payrolls is covered. Preparation of worksheets and financial statements is stressed. (5—2) 6

**BUS 2304 Business Law I:** A general course to acquaint the student with our court system and the fundamentals of business law on contracts, negotiable instruments and agency. Uniform Commercial Code is considered whenever applicable. (3—0) 3

**BUS 2305 Business Law II:** A continuing study of business laws governing sales, bailments, partnerships, corporations, insurance and property. The Uniform Commercial Code is considered wherever applicable. P.R. BUS 2304. (3—0) 3

**BUS 3204 Medical Terminology and Vocabulary I:** A study of the structure of medical words and terms. Emphasis is placed on spelling and defining commonly-used prefixes, suffixes, root words and their combining forms. (1—2) 2

**BUS 3301 Legal Terminology and Vocabulary:** An intensive course of study in legal terminology and vocabulary, including definitions, usage, derivations and spelling. (3—0) 3

**BUS 3404 Elementary Typewriting I:** An introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts. Speed requirement, 30 words per minute for three minutes. (Proficiency test may be taken for this course) (3—2) 4

**BUS 3405 Elementary Typewriting II:** Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulations, word division problems, manuscripts, and business letters. This course is individualized with self-pacing methods employed. Speed requirement, 40 words per minute for five minutes. P.R. BUS 3404 or equivalent. Placement in this course also by examination. (3—2) 4

**BUS 3406 Intermediate Typewriting I:** Emphasis is placed on production typing problems and speed building. Attention is given to the development of the student's ability to function as an expert typist, producing mailable copies. The production units involve tabulations, manuscripts, correspondence, and business forms. Individualized and self-instructional methods are employed. Speed requirement, 50 words per minute for five minutes. P.R. BUS 3405 or equivalent. (3—2) 4

**BUS 3414 Shorthand I:** A beginning course in the theory and practice of reading and writing shorthand. The emphasis is on phonetics, penmanship, word families, brief forms and phrases. (3—2) 4

**BUS 3415 Shorthand II:** A continued study of theory with greater emphasis on dictation and elementary transcription. P. R. BUS 3414 or the equivalent. (3—2) 4

**BUS 3416 Shorthand III:** Theory and speed building. Introduction to office style dictation. Emphasis is on development of speed in dictation and accuracy

in transcription. A minimum dictation rate on new materials of 80 words per minute for three minutes is required. P.R. BUS 3415 or equivalent.

(3-2) 4

**BUS 3600 Secretarial Accounting:** The principles, techniques and tools of accounting are studied. Emphasis is placed upon understanding of the mechanics of accounting—collecting, summarizing, analyzing and reporting information about services and mercantile enterprises. Opportunity is given for practical application of the principles learned.

(5-2) 6

**BUS 4100 Secretarial Seminar:** This seminar course will provide an overview of industries in the area offering challenging and remunerative job opportunities. The student will be exposed not only to the professional fields such as insurance and banking, but to such essential industries as manufacturing, food processing, engineering, and the like. This course can only be taken in the student's fifth or sixth quarter.

(0-2) 1

**BUS 4205 Medical Terminology and Vocabulary II:** A continuation of BUS 3204 with greater emphasis on the understanding of terminology and its use in the medical office. P.R. BUS 3204.

(1-2) 2

**BUS 4300 Office Machines:** A general survey of business and office machines. Students will receive training in techniques, processes, operation and application of ten-key adding machines, full-keyboard adding machines and calculators. P.R. MAT 3304.

(2-2) 3

**BUS 4301 Secretarial Procedures:** This course is designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These responsibilities include the following: receptionist duties, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization and insurance claims.

(3-0) 3

**BUS 4302 Medical Ethics and Law:** Principles of office conduct, ethical responsibility in regard to information acquired and the obligation and responsibilities of the medical office secretary are studied. Laws governing medical practice are included.

(3-0) 3

**BUS 4304 Advanced Office Machines:** Instruction is given to students in the operation of duplicating equipment and dictating and transcribing machines. P.R. BUS 3406.

(2-2) 3



- BUS 4305 Medical Transcription:** The student is required to complete production units on the typewriter from dictation-transcription machines of medical correspondence and documents such as case histories, articles, and hospital reports. P.R. BUS 4304, BUS 3406. (2—2) 3
- BUS 4306 Legal Environment of Business:** A study of the powers, policies, methods and procedures used by federal and state administrative agencies in promoting and regulating business enterprises. The course includes a consideration of the constitutional and statutory limitations on these commissions and judicial review of administrative action. P.R. BUS 2305. (3—0) 3
- BUS 4360 Administrative Office Management I:** This course involves principles and actual practices in the management of the flow of information within an enterprise. The basic management functions of planning, controlling, organizing, and coordination as applied to offices services, physical facilities, systems and procedures, work measurement and standards, and business information systems. (3—0) 3
- BUS 4370 Filing:** The fundamentals of indexing and filing. Theory and practice are combined by the use of miniature letters, filing boxes and guides. Topics studied include alphabetic name, geographic, subject and numerical filing. (3—0) 3
- BUS 4396 Individual Study—Secretarial:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and V-P is required. (3—0) 3
- BUS 4406 Medical Dictation and Transcription:** This course emphasizes taking dictation using medical terminology, the ability to transcribe such dictation, and drills and exercises constructing medical shorthand outlines. P.R. BUS 4417. (3—2) 4
- BUS 4407 Intermediate Typewriting II:** This course is a continuation of Business 3406 and is designed to increase the student's speed and accuracy on straight copy and production typing. The emphasis of the course is to review the fundamental principles of typewriting as they apply to production work. P.R. BUS 3406 or equivalent. (3—2) 4
- BUS 4414 Advanced Legal Typewriting:** This course is designed to further develop individual production rates, with emphasis on the planning and typing of projects appropriate to the field of study. These projects include contracts, agreements and powers of attorney. P.R. BUS 4407. (3—2) 4
- BUS 4417 Dictation and Transcription I:** This course develops the skills of taking dictation and transcribing materials appropriate to the course of study. Topics include a review of the theory and the dictation of familiar and unfamiliar materials at varying rates of speed. A minimum dictation rate on new materials of 90 words a minute for three minutes is required. P.R. BUS 3416 or equivalent. (3—2) 4
- BUS 4418 Dictation and Transcription II:** Covering materials appropriate to the course of study, the student develops the accuracy, speed and vocabulary which will enable her to meet the stenographic requirements of business offices. A minimum dictation rate on new materials of 100 words per minute for three minutes is required. P.R. BUS 4417. (3—2) 4
- BUS 4419 Dictation and Transcription III:** Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy. A minimum dictation rate on new materials of 110 words per minute for three minutes is required. P.R. BUS 4418. (3—2) 4
- BUS 4424 Advanced Executive Typewriting:** This is the last course in typewriting for the executive secretarial student. Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and in typing projects that closely approximate the work of the executive secretary. These projects include review of letter forms, statistical tabulation, and the typing of reports, manuscripts and other business forms. Development of speed up to 60 words per minute for five minutes is stressed. P.R. BUS 4407 or equivalent. (3—2) 4
- BUS 4448 Legal Dictation and Transcription I:** This course is designed to develop the student's ability to take and transcribe legal documents, instru-

ments, and letters rapidly and accurately. Shorthand shortcuts for legal vocabulary and law office procedures are also emphasized. A minimum dictation rate on new legal material of 100 words per minute for three minutes is required. P.R. BUS 4417. (3-2) 4

**BUS 4449 Legal Dictation and Transcription II:** A continuation of BUS 4448, this course further emphasizes speed building and accuracy in taking and transcribing legal materials. Shorthand shortcuts and law office procedures are covered. A minimum dictation rate on new legal material of 110 words per minute for three minutes is required. P.R. BUS 4448. (3-2) 4

**BUS 4454 Advanced Medical Typewriting:** Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and typing projects that closely approximate the work appropriate to the field of study. These projects include hospital reports and case histories. P.R. BUS 4407. (3-2) 4

**BUS 5610 Medical Accounting:** The principles, techniques and tools of accounting are studied. Emphasis is placed upon understanding the mechanics of accounting—collecting, summarizing, analyzing and reporting information about service and mercantile enterprises. Opportunity is given for practical application of the principles learned. (5-2) 6

**ECO 3301 American Economic History:** A survey of American economic development from the colonial period to the present. Emphasis is given to the chronologic evolution of modern agriculture, transportation, banking and money supply, industry, domestic and foreign trade, the labor movement, and the government role in the economy. Historical analysis of depression, prosperity and the demand for full employment. (3-0) 3

**EDP 3201 Automation Survey in Medical Facilities:** An overview of data preparation and processing as used in medical facilities utilizing electronic data processing methods and equipment. (2-0) 2

**EDP 3310 Data Processing Fundamentals:** A basic introductory course in the fundamental principles of data collection, recording, interpreting, and processing data. Emphasis is placed in input/output devices, data handling equipment, and the utilization of unit record equipment. (2-2) 3

**ENG 1304 English Composition I:** Study of expository writing based on reading and class discussion; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods. P.R. Placement examination or consent. (3-0) 3

**ENG 1305 English Composition II:** Continuing study of composition based on ideas in the short story and the novel, emphasizing the techniques of analysis and synthesis in writing. P.R. ENG 1304 or consent. (3-0) 3

**ENG 3304 Communications I:** This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English. (3-0) 3

**ENG 3305 Communications II:** Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. ENG 3304. (3-0) 3

**ENG 4304 Business Communications:** This course develops skills in techniques used in writing business communications. Emphasis is placed on writing effective letters and reports. Action-getting sales letters and letters involving credit, collections, adjustments, complaints, orders, acknowledgements and remittances are covered. P.R. BUS 3404 or equivalent. (3-0) 3

**MAT 1300 Business Mathematics:** A review of basic mathematics in business; interest and bank discounts, payroll records, taxes, retailing costs, markups and discounts, compound interest and annuities. (3-0) 3

**MAT 3304 Business Arithmetic:** A study of fundamental processes; addition, subtraction, multiplication and division of whole numbers and common and decimal fractions. The manipulation and application of per cent, essentials of algebraic operations and per cents as applied to the income statements are also studied. P.R. Satisfactory score on entrance math test. (3-0) 3

**PSY 3300 Personality Development:** This course is designed to help the student recognize the importance of the physical, intellectual, social and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement. (3—0) 3

**PSY 4300 Applied Psychology:** A study of the principles of psychology which will be of assistance in the understanding of interpersonal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are employee selection, supervision, job satisfaction and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and member of the general community. (3—0) 3

**SPH 1300 Oral Communications:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3—0) 3

## A Word About The Secretarial Skills Lab

### What Are The Advantages To You?

Progress at your own rate.

Work until you get the skill and/or the grade you desire.

No wasted time while other students ask questions.

### What Courses Are Offered In The Skills Lab?

Elementary Typewriting I—Business 3404

Elementary Typewriting II—Business 3405

Intermediate Typewriting I—Business 3406

Dictation and Transcription I—Business 4417

Dictation and Transcription II—Business 4418

Dictation and Transcription III—Business 4419

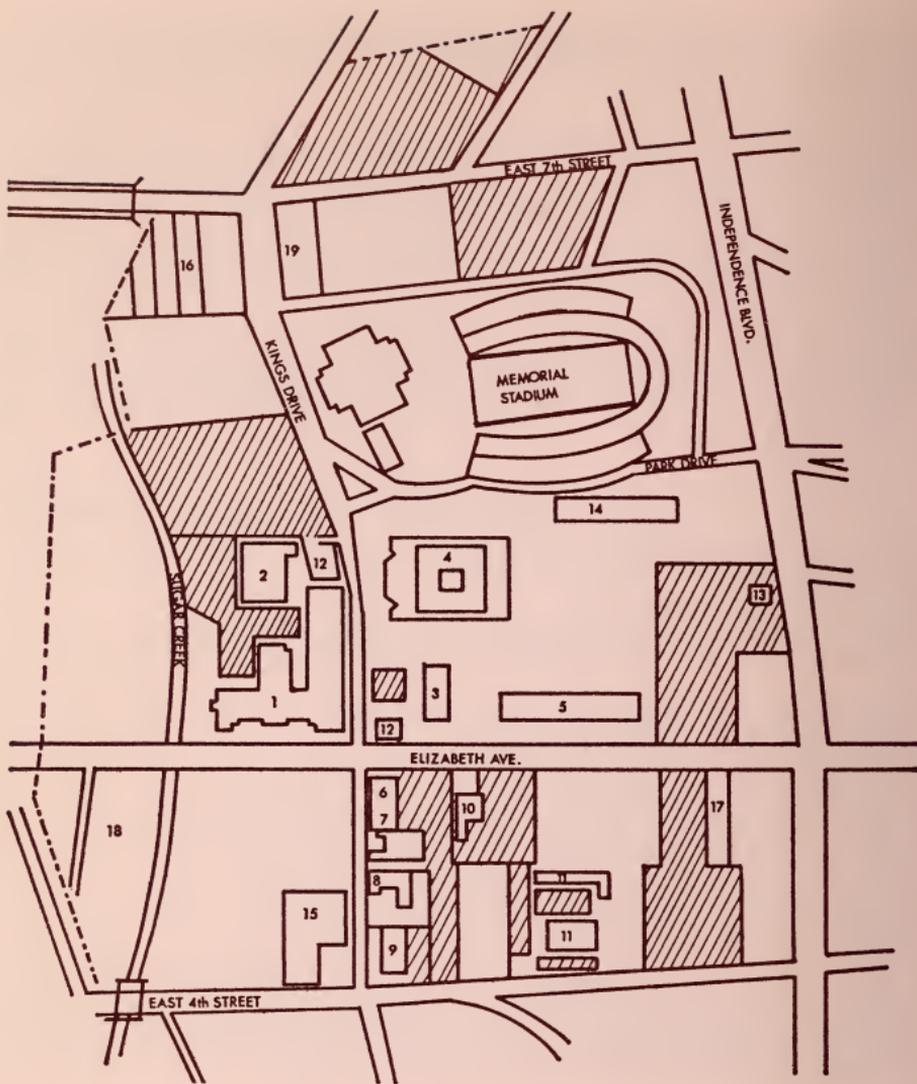
Business Communications—English 4304

Intermediate Typing II and Advanced Typing

Two courses, Business 4407 International Typing II and Business 4424 Advanced Executive Typing will be offered on a contract basis. You will decide what grade you wish! Contracts will be negotiated between student and instructor.

### What If You Decide To Drop?

Don't drop! YOU wanted either to learn to type or to improve your present typing ability or you wouldn't have enrolled. Why give up? If things get too involved during a quarter or if your life gets too hectic, slow down. If you don't attain your goals in one quarter, come back the next quarter and continue working where you left off.



### INDEX TO MAP

1. Old Central Building
2. Shop Building
3. Counseling-Administration Building
4. Learning Resources Center
5. Classroom Building #1
6. Dining Facility
7. Support Services
8. Child Care Training Center
9. Auto Shop #2
10. Faculty Office Building
11. Robinson Building
12. Woodruff Building
13. Honey Building
14. Classroom Building #2
15. Riegel Building
16. }
17. } Property Owned By CPCC, but Undeveloped
18. }
19. }

The fire science technician is responsible for seeking to prevent losses by eliminating hazards. He inspects various types of buildings for fire and safety hazards, checks existing fire and safety codes for methods of eliminating hazards and applies principles of protection in a logical sequence to arrive at solutions.

Employment opportunities as a fire science technician are available with insurance companies, industrial firms, governmental agencies, educational organizations, fire protection equipment manufacturers and research groups. The technician may also be involved in teaching the use of basic fire protection and safety equipment, in demonstrating equipment and in supervising installation of equipment.

### Description Of Curriculum

Fire Science Technology is a two-year curriculum of technical education designed to prepare the individual for entry-level employment as a fire science technician. The curriculum provides a basic technical background in fire protection, safety and related subjects. Students are trained to identify fire and safety hazards and to propose effective measures for eliminating hazards. Specific skills are developed in many phases of the occupation.

This curriculum is offered in cooperation with the Rowan Technical Institute. All courses except several which require specialized fire equipment can be taken at Central Piedmont and are scheduled so that persons now employed as firemen can take them at night. The courses requiring specialized fire equipment are offered at Rowan Technical Institute and are also scheduled for the convenience of persons now employed as firemen. Graduates will receive the degree Associate in Applied Science in Fire Science Technology. A diploma in Fire Operation may be awarded upon completion of a shorter pre-planned program. This program reflects a high degree of specialization, but prerequisites will be observed. Persons interested in such a program should contact a counselor in the office of student services.





### Suggested Sequence Of Required Courses For Fire Science Technology

Course Title	Hours per Week			Quarter Hours Credit
	Class	Lab.	Shops	
<b>First Quarter</b>				
ENG 3304 Communications I	3	0	0	3
PHY 3404 Physics I: Basic Mechanics	3	2	0	3
MAT 3504 Technical Mathematics I	5	0	0	5
FIP 3300 Introduction to Fire Protection Hazards	3	0	0	3
	<u>14</u>	<u>2</u>	<u>0</u>	<u>15</u>
<b>Second Quarter</b>				
ENG 3305 Communications II	3	0	0	3
FIP 3304 Municipal Fire Protection	3	0	0	3
PHY 3405 Physics II: Work, Energy, Power	3	2	0	4
FIP 3301 Fire Prevention Programs	3	0	0	3
CHM 1804 General Chemistry I	3	4	0	6
	<u>15</u>	<u>6</u>	<u>0</u>	<u>18</u>
<b>Third Quarter</b>				
FIP 3504 Chemistry of Flammable Materials	3	4	0	6
PSY 4300 Applied Psychology	3	0	0	3
ECO 2300 Economics I	3	0	0	3
FIP 3314 Insurance Grading Schedules	3	0	0	3
D&T 3404 Technical Drafting I	3	4	0	4
	<u>14</u>	<u>8</u>	<u>0</u>	<u>18</u>
<b>Fourth Quarter</b>				
SOC 3514 Introduction to Sociology	3	0	0	3
FIP 4304 Fire Protection Law	3	0	0	3
FIP 4324 Construction Codes and Material Rating	2	2	0	3
FIP 4300 Municipal Finance	3	0	0	3
SPH 1300 Oral Communication	3	0	0	3
BUS 4303 Supervision	3	0	0	3
	<u>19</u>	<u>2</u>	<u>0</u>	<u>20</u>
<b>Fifth Quarter</b>				
BUS 4330 Personnel Management	3	0	0	3
FIP 4314 Training Programs & Methods of Instruction	3	0	0	3
FIP 4834 Fire Fighting Strategy	2	2	0	3
FIP 4404 Hydraulics and Water Distribution Systems	3	0	0	3
FIP 4400 Applied Electricity for Fire Protection	3	2	0	4
	<u>14</u>	<u>4</u>	<u>0</u>	<u>17</u>
<b>Sixth Quarter</b>				
FIP 4405 Sprinkler and Standpipe Systems	3	0	2	4
FIP 4414 Inspection Principles and Practices	2	0	2	4
FIP 4424 Automatic Alarm and Extinguishing Systems	2	4	0	4
EDP 3800 Introduction to Computer Concepts	3	0	0	3
FIP 4434 Chemical and Radiation Hazards	3	2	0	4
	<u>13</u>	<u>6</u>	<u>2</u>	<u>19</u>

## Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Fire Science Technology

**BQS 4302 Supervision:** A study of the critically important and practical concepts of modern-day first-line supervision. Emphasis is placed on the supervisor's major functions, his face-to-face relations with others, and his intellectual, emotional and ethical development. (3-0) 3

**BQS 4210 Personnel Management:** An introduction to the operation of a personnel department. Emphasis is placed on the scientific management of manpower through personnel policies pertaining to recruitment, selection, placement, training, promotion, health and safety and employee services. (3-0) 3

**CHM 1504 General Chemistry I:** A study of the fundamental postulates and laws of chemistry with emphasis upon the relationship of atomic structure to physical and chemical properties of the elements. CR: MAT 1504, MAT 3504 or consent. (3-4) 5

**DFT 3404 Technical Drafting I:** An introduction to drafting and design practices and principles. The attainment of the basic skills and techniques of drafting including use of drafting equipment, lettering, freehand, orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning and noting. Methods of reproducing, filing and storing drawings are studied and the student is introduced to "working drawings." (2-4) 4

**ECC 1300 Economics I:** Development of economic thought, measurement of national income, theory of national income determination, and importance of money supply and fiscal policy are included. (3-0) 3

**EDP 3300 Introduction to Computer Concepts:** An introductory course in computers for the student who plans to pursue data processing as a career and for the student who desires a general non-technical knowledge of terminology and concept. No previous knowledge or experience in data processing is required. (3-0) 3

**ENG 3304 Communications I:** This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English. (3-0) 3

**ENG 3305 Communications II:** Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. PR: ENG 3304. (3-0) 3

**FIP 3300 Introduction to Fire Protection Hazards:** History and development of fire service, safety and security movements. The role of fire service, protection, safety personnel, and auxiliary organizations. Identification of general fire hazards and their causes and the application of fire protection principles to them. (3-0) 3

**FIP 3001 Fire Prevention Programs:** Principles and application of fire prevention related to the community and industrial plants. The development and maintenance of fire prevention programs, educational programs, and inspection programs. Specific applications of related disciplines to fire prevention problems. (3-0) 3

**FIP 3304 Municipal Fire Protection:** Fire department organization, personnel management, and the department's relationship with other city departments. Evaluation of public fire protection needs, financial factors, records and reports, equipment procurement policies, apparatus, tools, training needs and programs, maintenance needs and facilities, and other equipment necessary for modern fire protection. P.R. FIP 3300. (3-0) 3



## Human Services Associate

A special need exists in today's society for the development of para-professionals to work in social, community, and educational services. The need for these professional assistants is increasing more rapidly today to include such settings as child care agencies, family service agencies, hospitals, mental health centers, public welfare departments, schools, and rehabilitation agencies. In order to perform as a paraprofessional, the human services associate must have the knowledge and understanding of human behavior, group dynamics, and social processes. The associate must also have the skills of communication and assessment in order to work effectively with people.

### Description Of Curriculum

The Human Services Associate curriculum is designed to prepare the student for entry into a variety of institutions and agencies which provide social, community, and educational services to people. Along with the human services courses, the curriculum provides for electives that allow the student to specialize his education for a specific work-interest area. During the final five quarters, emphasis is placed on the development of relevant knowledge and skills pertinent to the chosen area. Internships in one or more areas of human services are included in the final phases of the curriculum.





**Suggested Sequence Of Required Courses For  
Human Services Associate**

First Quarter	Course Title	Hours per Week			Quarter Hours Credit
		Class	Lab.	Clin.	
ENG 3304	Communications I	3	0	0	3
HSA 3500	Human Services Aide I	3	0	6	5
PSY 2504	General Psychology	5	0	0	5
HED 1204	First Aid I	2	0	0	2
		<hr/>	<hr/>	<hr/>	<hr/>
		13	0	6	15
<b>Second Quarter</b>					
ENG 3305	Communications II	3	0	0	3
HSA 3504	Human Services Aide II	3	0	6	5
SOC 2514	Introduction to Sociology	5	0	0	5
	Specialty Elective				4
		<hr/>	<hr/>	<hr/>	<hr/>
		11	0	6	17
<b>Third Quarter</b>					
ENG 3306	Communications III	3	0	0	3
HSA 3505	Human Services Aide III	3	0	6	5
BIO 3500	Basic Health Science	3	4	0	5
	Specialty Elective				4
		<hr/>	<hr/>	<hr/>	<hr/>
		9	4	6	17
<b>Fourth Quarter</b>					
HSA 4506	Human Services Aide IV	3	0	6	5
PSY 2514	Abnormal Psychology	5	0	0	5
SPH 1300	Oral Communications	3	0	0	3
	Specialty Elective				4
		<hr/>	<hr/>	<hr/>	<hr/>
		11	0	6	17
<b>Fifth Quarter</b>					
HSA 4507	Human Services Aide V	3	0	6	5
HED 1200	Public Health and Sanitation	2	0	0	2
PSY 2505	Human Development	5	0	0	5
	Specialty Elective				4
		<hr/>	<hr/>	<hr/>	<hr/>
		10	0	6	16
<b>Sixth Quarter</b>					
HSA 4608	Human Services Aide VI	2	0	12	6
SOC 2515	Social Problems	5	0	0	5
	Specialty Elective				3
		<hr/>	<hr/>	<hr/>	<hr/>
		7	0	12	14

## Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or CR or both. This means that there is a course that is a prerequisite of a corequisite. The numbers in parentheses indicate the number of lecture, clinic and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Human Services Associate

**BIO 3500 Basic Health Science:** This course is designed to give the student an understanding of basic science principles and their relationships to health. The course includes study of the structure and function of the human body, principles of food and nutrition and selected principles of microbiology. (3-4-0) 5

**ENG 3304 Communications I:** This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English. (3-0-0) 3

**ENG 3305 Communications II:** Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. ENG 3304. (3-0-0) 3

**ENG 3306 Communications III:** The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. ENG 3305. (3-0-0) 3

**HED 1200 Public Health and Sanitation:** Basic information and orientation regarding sanitation and public health. Practices and principles related to the needs of children and adults. Topics presented include immunization, signs and symptoms of common communicable diseases, personal hygiene and cleanliness, elements of sanitation of food, water, and the environment. (2-0-0) 2

**HED 1204 First Aid I:** The purpose of first aid training is to acquire knowledge and skill for the emergency care of the sick and injured until a physician arrives, and to create an active interest in the prevention of accidents through the elimination of causes. The standard and advanced certificate will be awarded upon successful completion of the course. (2-0-0) 2

**HSA 3500 Human Services Aide I:** Students are acquainted with major human service agencies and institutions in this region with emphasis on the roles and functions of paraprofessionals in the various types of human service work. Students are required to participate in scheduled field visits to these agencies. (3-0-6) 5

**HSA 3504 Human Services Aide II:** A study of the major client groups with which the paraprofessional may work. Emphasis is placed on characteristics of individual and situational problems. A development study of client training and assistance is also included. Students are required to participate in an internship training program (3-0-6) 5

**HSA 3505 Human Services Aide III:** This course is a study in interpersonal relationships, including the development of social behavior and self-awareness through levels of communication. Emphasis is placed on personal development and openness in interpersonal relationships. A correlative analysis of classroom work and internship training is required of the student. (3-0-6) 5

**HSA 4506 Human Services Aide IV:** Humanistic and behavioristic concepts of the paraprofessional helping relationships are studied. Discussion centers on techniques and methods for paraprofessional interviewing and counseling. Emphasis is placed on the role of the helping therapist. A correlative analysis of classroom work and internship training is required of the student. (3-0-6) 5

**HSA 4507 Human Services Aide V:** Classical and operant conditioning theory and techniques of behavior modification are studied. (These techniques are applied in a controlled setting with emphasis placed on fundamental data collecting procedures, such as observation and measurement.) Field experience through an internship training situation is included. (3-0-6) 5

**HSA 4608 Human Services Aide VI:** Final supervised internship training is in chosen area of interest. Weekly seminars are used for discussion of specific problems encountered in internship. Analysis of internship training and research is required of the student. (2-0-12) 6

**HSA 4390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3-0-0) 3

**PSY 2504 General Psychology:** A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements and theories of psychology. (5-0-0) 5

**PSY 2505 Human Development:** Development of the normal child and adolescent, with consideration of the social, biological and cultural influences upon growth. P.R. PSY 2504. (5-0-0) 5

**PSY 2514 Abnormal Psychology:** The biological, intellectual, cultural, and physiological dynamics of human behavior are examined with emphasis on deviant development patterns. P.R. PSY 2504 or consent. (5-0-0) 5

**SOC 2514 Introduction to Sociology:** An analysis of the society and culture dealing with social organization, control, institutions, stratification and social change. (5-0-0) 5

**SOC 2515 Social Problems:** A study of the major social problems of modern society, including family disorganization, minority groups and problems associated with industrial and urban development. P.R. SOC 2514 or consent. (5-0-0) 5

**SPH 1300 Oral Communications:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3-0-0) 3

### Early Childhood Aide

The expanding development of child care facilities in today's society has warranted specialized programs in child care training. Public and private child day care centers desire trained personnel to aid in the effective daily care of children. These aides must have the knowledge and skills necessary to work well with children.

#### Description Of Curriculum

Students in the Early Childhood Aide curriculum focus their studies in areas of child development and care, communication, children's music and psychology. Practical skills are emphasized with the theoretical framework of child care.

The curriculum in Early Childhood Aide leads to a diploma, but may also be used as credit toward the degree Associate in Applied Science in Human Services, thus providing an opportunity for career mobility and upgrading.



ENG 5500	Communication Skills	5	0	5
MUS 1304	Children's Music I	3	0	3
PSY 5200	Human Relations	2	0	2
HSA 5500	Practical Problems of Child Care	3	6	5
HSA 5501	Child Development	3	6	5

Hours per Week		Quarter
Class	Lab.	Credit
5	0	5
3	0	3
2	0	2
3	6	5
3	6	5
<hr/>	<hr/>	<hr/>
16	12	20

#### Course Description

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

##### Early Childhood Aide

**HSA 5500 Practical Problems of Child Care:** Emphasis will be placed on program activities and the interaction of the staff/child/family relationships in the child's physical, social, emotional and intellectual development. Laboratory experience in the Child Care Training Center is required. (3-6) 5

**HSA 5501 Child Development:** Development levels from infancy through the preschool years. Emphasis will be placed on the philosophy that learning through play in an enriched environment is important to the developmental process. Observation and supervised participation in the Child Care Training Center is required. (3-6) 5

**ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems. (5-0) 5

**MUS 1304 Children's Music I:** An introductory study of the fundamentals of music, with concentration on development of basic skills in reading and performing (singing, percussion instruments, keyboard). Also included will be a study of children's song literature and observation in the Child Care Training Center. (3-0) 3

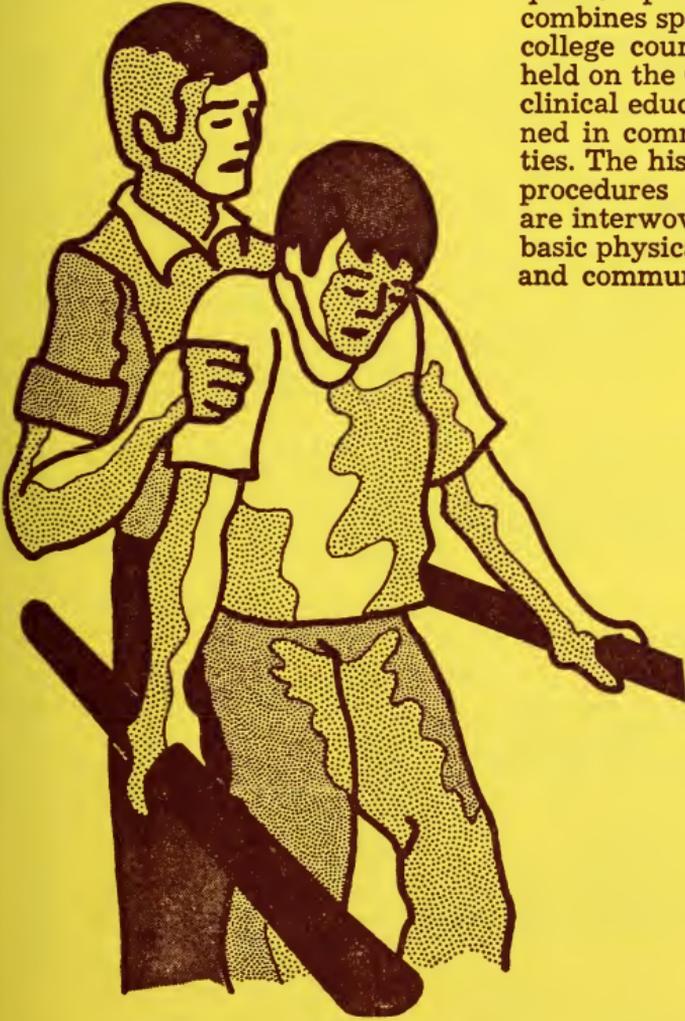
**PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management. (2-6) 2

## Physical Therapy Assisting

The need for additional personnel to meet increasing demands for physical therapy services is acute. Recognizing this need, the American Physical Therapy Association has approved the development of courses for education of the physical therapy assistant. Working under the supervision of a professional physical therapist, the assistant will be prepared to offer to the patient services for the prevention and alleviation of physical impairments. This curriculum prepares the assistant to perform skills essential to the contemporary health care team.

### Description Of Curriculum

The Associate of Applied Science degree will be awarded upon successful completion of a six-quarter period of study which combines specialized and general college courses. The classes are held on the College campus with clinical education carefully planned in community health facilities. The history, philosophy and procedures of physical therapy are interwoven with study in the basic physical and social sciences and communications.





### Suggested Sequence Of Required Courses For Physical Therapy Assisting

		Course Title	Hours per Week			Quarter
			Class	Lab.	Clin.	Hours Credit
<b>First Quarter</b>						
BIO	1504	Human Anatomy and Physiology I	3	4	0	5
PSY	2504	General Psychology	5	0	0	5
BUS	3204	Medical Terminology and Vocabulary I	1	2	0	2
PTH	3404	Introduction to Physical Therapy	3	0	3	4
HED	1204	First Aid	2	0	0	2
			14	6	3	18
<b>Second Quarter</b>						
BIO	1505	Human Anatomy and Physiology II	3	4	0	5
ENG	1304	English Composition I or Communications I	3	0	0	3
ENG	3304	Psychology Elective	5	0	0	5
PTH	3524	Physical Therapy Procedures I	3	0	6*	5
			14	4	6	18
<b>Third Quarter</b>						
ENG	1305	English Composition II or Communications II	3	0	0	3
BUS	3404	Elementary Typewriting I	3	2	0	4
PTH	3525	Physical Therapy Procedures II	3	0	6*	5
PTH	3514	Therapeutic Exercises	3	6	0	6
			12	8	6	18
<b>Fourth Quarter</b>						
ENG	1306	English Composition III or Communications III	3	0	0	3
SOC	2514	Introduction to Sociology	5	0	0	5
PTH	4627	Physical Therapy Procedures III	3	0	9*	6
PTH	4324	Psychology of Adjustment	3	0	0	3
			14	0	9	17
<b>Fifth Quarter</b>						
SOC		Sociology Elective	5	0	0	5
SPH	1300	Oral Communication	3	0	0	3
PTH	4728	Physical Therapy Procedures IV	3	0	12*	7
PTH	4334	Community Health and Welfare	3	0	0	3
			14	0	12	18
<b>Sixth Quarter</b>						
PTH	4344	Seminar in Physical Therapy Procedures	3	0	0	3
PTH	4945	Clinical Education	4	0	30	14
			7	0	30	17

\*Clinic contact hours include a combination of laboratory and clinic hours as assigned by the instructor.

## Course Descriptions

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture, clinic and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Physical Therapy Assistant

- BIO 1504 Human Anatomy and Physiology I:** A study of the structure and normal functions of the human body and its systems with emphasis upon the interrelated functions of various parts and systematic processes in the development of basic physiological principles. (3—4—0) 5
- BIO 1505 Human Anatomy and Physiology II:** A continuation of BIO 1504. P.R. BIO 1504 or consent. (3—4—0) 5
- BUS 3204 Medical Terminology and Vocabulary I:** A study of the structure of medical words and terms. Emphasis is placed on spelling and defining commonly-used prefixes, suffixes, root words and their combining forms. (1—2—0) 2
- BUS 3404 Elementary Typewriting I:** An introduction of the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation and manuscripts. (3—2—0) 4
- ENG 1304 English Composition I:** Study of expository writing based on reading and class discussion; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods. P.R. Placement examination or consent. (3—0—0) 3
- ENG 1305 English Composition II:** Continuing study of composition based on ideas in the short story and the novel, emphasizing the techniques of analysis and synthesis in writing. P.R. ENG 1304 or consent. (3—0—0) 3
- ENG 1306 English Composition III:** Intensive study of composition, emphasizing the critical reading of drama and poetry, leading into the basic techniques of research, and culminating in a formally documented research paper. P.R. ENG 1305 or consent. (3—0—0) 3
- ENG 3304 Communications I:** This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English. (3—0—0) 3
- ENG 3305 Communications II:** Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. ENG 3304. (3—0—0) 3
- ENG 3306 Communications III:** The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. ENG 3305. (3—0—0) 3
- HED 1204 First Aid I:** The purpose of first aid training is to acquire knowledge and skill for the emergency care of the sick and injured until a physician arrives, and to create an active interest in the prevention of accidents through the elimination of causes. The standard and advanced certificate will be awarded upon successful completion of the course. (2—0—0) 2
- PSY 2504 General Psychology:** A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements and theories of psychology. (5—0—0) 5

- PTH 3404 Introduction to Physical Therapy:** An introduction to the philosophy, history and techniques of physical therapy, its role in health care and its relationship to other health areas. The student begins a study of basic mechanics and elementary handling of patients. P.R. Acceptance into program  
(3-0-3) 4
- PTH 3514 Therapeutic Exercises:** Using a background of knowledge in basic anatomy and physiology the student will study the functional anatomy of exercise for treatment procedures in the abnormal (pathology) states and the wide variety of methods of exercises. Clinical practice on other students and observation of the treatment of patients in a clinical setting will be provided. P.R. BIO 1505.  
(3-0-6) 5
- PTH 3524 Physical Therapy Procedures I:** The first of a four quarter sequence which emphasizes basic physical and physiological principles and the techniques of selected physical therapy treatment measures. First course emphasis is on preparation of the patient for treatment, hot pack application, and massage of the back and upper extremities. The entire sequence is a combination of laboratory practice followed by clinical learning experience. P.R. PTH. 3404.  
(3-0-6) 5
- PTH 3525 Physical Therapy Procedures II:** A continuation of the study of selected physical therapy treatment measures. Emphasis is on low and high frequency currents and massage of the lower extremities. P.R. PTH 3524.  
(3-0-6) 5
- PTH 4324 Psychology of Adjustment:** The emphasis in this course is on the psychological implications of interpersonal relationships between the health team worker and the patient. The student will seek to gain an understanding of the emotional reactions of the patient to disease, impairment and handicap. P.R. PTH 3525.  
(3-0-0) 5
- PTH 4334 Community Health and Welfare:** This is a one-quarter survey course of community health and welfare resources and their coordination. Other topics include the legal implications of practice and governmental and social influences in health care. P.R. PTH 4627.  
(3-0-0) 3
- PTH 4344 Seminar in Physical Therapy Procedures:** Student presentation and discussion of learning experiences gained in the clinical setting. C.R. PTH 4945; P.R. PTH 4728.  
(3-0-0) 3
- PTH 4627 Physical Therapy Procedures III:** Continued study of selected physical therapy treatment measures. Emphasis this quarter is on the use of light radiation sources, the use of paraffin for treatment, and hydrotherapy measures. P.R. PTH 3525.  
(3-0-9) 6
- PTH 4728 Physical Therapy Procedures IV:** Completion of a four-quarter sequence of physical therapy treatment measures. Emphasis is on the therapeutic use of cold procedures and homebound therapy with a review of all learned skills, integrating all such treatment measures in simulated clinical conditions. P.R. PTH 4627.  
(3-0-12) 7
- PTH 4945 Clinical Education:** Clinical assignments to facilities for practical experience. This is a concentrated clinical experience which will reinforce clinical experiences gained in the sequence of courses on physical therapy treatment measures. The student will have assignment periods to cover a spectrum of physical therapy care. C.R. PTH 4344  
(4-0-30) 14
- SOC 2514 Introduction to Sociology:** An analysis of the society and culture dealing with social organization, control, institutions, stratification and social change.  
(5-0-0) 5
- SPH 1300 Oral Communications:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement.  
(3-0-0) 3
- PTH 4390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required.  
(3-0-0) 3

It is recognized today that the police profession can no longer rely on its past methodology in recruitment, training and performance in the field. The complexities of modern society require that law enforcement officers be knowledgeable in a number of areas. A law enforcement officer must have an understanding of human psychology in order to arbitrate domestic quarrels and properly handle deviant behavior. His deep involvement with the entire administration of justice necessitates an understanding of law. He must have an understanding of the behavior, attitudes and motivations of various ethnic groups. The law enforcement officer must understand emergency procedures and be prepared to administer aid to injured and ill individuals.

A law enforcement officer must be expert in his daily work area; he must develop a competency in investigative techniques, patrol and traffic functions, court procedures, police management, forensic science and the mechanics of arrest, search and seizure.

Above all, the law enforcement officer must understand the meaning and value of ethical concepts relating to honesty, integrity and tolerance.



### Description Of Curriculum

This curriculum will assist the student in acquiring the necessary understandings required of law enforcement officers by modern society. The approach is both theoretical and practical, with course work which covers all areas of the practical, theoretical and technical application of law enforcement techniques. The courses in this curriculum are designed for law enforcement officers, prospective law enforcement officers, and citizens interested in the crime problem. Classes are scheduled so that they can be taken by law enforcement officers during their off-duty hours. The degree of Associate in Applied Science in Police Science—Criminology will be awarded upon successful completion of this curriculum.



### Suggested Sequence Of Required Courses For Police Science—Criminology

Course Title		Hours per Week	Quarter
		Class	Hours Credit
<b>First Quarter</b>			
ENG 1304	English Composition I	3	0 3
MAT 1300	Business Mathematics	3	0 3
PSC 3500	Introduction to Criminology	5	0 5
POL 1504	American Government I: National		
	or		
HIS 1500	World Civilization I	5	0 5
HED 1204	First Aid I	2	0 2
		<hr/>	<hr/>
		18	0 18
<b>Second Quarter</b>			
ENG 1305	English Composition II	3	0 3
PSC 3501	Police Problems and Practices	5	0 5
POL 1505	American Government II: State and Local		
	or		
HIS 1501	World Civilization II	5	0 5
HED 1205	First Aid II	2	0 2
		<hr/>	<hr/>
		15	0 15
<b>Third Quarter</b>			
ENG 1306	English Composition III	3	0 3
PSC 3502	Police Organization and Administration	5	0 5
PSC 3503	Forensic Science	5	0 5
PSC 3510	Criminal Law Procedures I	5	0 5
		<hr/>	<hr/>
		18	0 18
<b>Fourth Quarter</b>			
PSC 4510	Police Operations	4	2 5
PSC 4501	Criminal Law Procedures II	5	0 5
PSC 4500	Criminal Investigation	3	4 5
PSC 4300	Race Relations	3	0 3
		<hr/>	<hr/>
		15	6 18
<b>Fifth Quarter</b>			
PSC 4502	Juvenile Delinquency	5	0 5
SOC 2514	Introduction to Sociology	5	0 5
PSC 4511	Administration of Justice	5	0 5
SPH 1300	Oral Communication	3	0 3
		<hr/>	<hr/>
		18	0 18
<b>Sixth Quarter</b>			
PSY 2504	General Psychology	5	0 5
PSC 4503	Deviant Behavior	5	0 5
SOC 2515	Social Problems	5	0 5
		<hr/>	<hr/>
		15	0 15

## General Area

### Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Police Science—Criminology

**ENG 1304 English Composition I:** Study of expository writing based on reading and class discussion; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods. P.R. Placement examination or consent. (3—0) 3

**ENG 1305 English Composition II:** Continuing study of composition based on ideas in the short story and the novel, emphasizing the techniques of analysis and synthesis in writing. P.R. ENG 1304 or consent. (3—0) 3

**ENG 1306 English Composition III:** Intensive study of composition, emphasizing the critical reading of drama and poetry, leading into the basic techniques of research, and culminating in a formally documented research paper. P.R. ENG 1305 or consent. (3—0) 3

**HED 1204 First Aid I:** The purpose of first aid training is to acquire knowledge and skill for the emergency care of the sick and injured until a physician arrives, and to create an active interest in the prevention of accidents through the elimination of causes. The standard and advanced certificate will be awarded upon successful completion of the course. (2—0) 2

**HED 1205 First Aid II:** Advanced study beyond the advanced certification obtained in HED 1204. Successful completion of this course qualifies the individual as an instructor of first aid. P.R. HED 1204. (2—0) 2

**HIS 1500 World Civilization I:** A survey of the history of man—his political, social, religious, intellectual and artistic activities—from the earliest times to the seventeenth century in Europe, Asia and Africa. (5—0) 5

**HIS 1501 World Civilization II:** The concluding part of the survey of world civilization, including the trends from the seventeenth century to the present in Europe, Asia and the Americas. (5—0) 5

**MAT 1300 Business Mathematics:** A review of basic mathematics in business; interest and bank discounts, payroll records, taxes, retailing costs, markups and discounts, compound interest and annuities. (3—0) 3

**POL 1504 American Government I: National:** The constitution and legal bases of the national government in relation to its organization, powers, procedures and programs. Attention is given to the instrumentalities of popular control. (5—0) 5

**POL 1505 American Government II: State and Local:** The relationship of state government to the national government; state constitutions; the organization, powers, procedures and programs of the state government; the relationship of state and local governments; popular control in state and local governments. P.R. POL 1504 or consent. (5—0) 5

**PSC 3500 Introduction to Criminology:** A study of the causes and methods of prevention, detection and treatment of crime, encompassing historical and contemporary theories. (5—0) 5

- PSC 3501 Police Problems and Practices:** A contemporary and historical study of policing—its relationship with the public, the press and governmental agencies. Police practices are evaluated in terms of maintaining law and order in the community and protecting life and property. (5—0) 5
- PSC 3502 Police Organization and Administration:** A study of the principles of organization and administration of law enforcement; i.e., recruitment, selection, training, discipline and promotion; the functional divisions of the modern police department and the professionalism of police services. (5—0) 5
- PSC 3503 Forensic Science:** An introduction to crime laboratory techniques which stresses the examination of questioned documents, comparative micrography, polygraph examination, firearms identification, pathology, toxicology, immunology and fingerprint techniques. (3—4) 5
- PSC 3510 Criminal Law Procedures I:** A study of substantive crimes and their punishment, parties to crime, rules of evidence and criminal procedure. (5—0) 5
- PSC 4300 Race Relations:** A study of concepts and attitudes held by police in relation to brutality, dishonesty and minority groups. (3—0) 3
- PSC 4511 Administration of Justice:** A study of the functions and responsibilities of our federal, state and local court systems. (5—0) 5
- PSC 4500 Criminal Investigation:** A course in investigative methods and techniques and conduct at crime scenes. The search for, collection and preservation of physical evidence and the role of the crime laboratory are studied. Specific criminal offenses, including juvenile, are used as examples. The use of interrogation techniques within the framework of recent court decisions is emphasized. (3—4) 5
- PSC 4501 Criminal Law Procedures II:** An in-depth study of the laws of arrest, search and seizure within the framework of recent court decisions. (5—0) 5
- PSC 4502 Juvenile Delinquency:** An analysis of juvenile delinquency as it relates to the family, school, church, police and peer group. Etiological factors of delinquency and rehabilitative methods are discussed. (5—0) 5
- PSC 4503 Deviant Behavior:** The biological, intellectual, emotional and cultural dynamics of human behavior are examined with emphasis on deviant developmental patterns. (5—0) 5
- PSC 4510 Police Operations:** Police patrol duties and responsibilities including the distribution and supervision of police forces, patrol procedures, communications, safety, emergencies and traffic enforcement. (4—2) 5
- PSY 2504 General Psychology:** A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements and theories of psychology. (5—0) 5
- SOC 2514 Introduction to Sociology:** An analysis of the society and culture dealing with social organization, control, institutions, stratification and social change. (5—0) 5
- SOC 2515 Social Problems:** A study of the major social problems of modern society, including family disorganization, minority groups and problems associated with industrial and urban development. P.R. SOC 2514 or consent. (5—0) 5
- SPH 1300 Oral Communications:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3—0) 3
- PSC 4390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and V-P is required. (3—0) 3

## The Transfer-Liberal Arts Program



### Description Of The Program

The rapid growth of population in the United States and the demand for education beyond the high school have resulted in increasing numbers of students seeking admission to colleges and universities throughout the nation. To help meet the needs of these students, community colleges, which offer the first two years of baccalaureate degree work, are being established in all sections of the country. Central Piedmont Community College, one of the community colleges in the North Carolina system, is dedicated to the task of assisting students toward their educational goals.

In the first two years of college, students secure a general education in areas of humanities, social studies, science and mathematics; in addition, they begin specialized work in their own particular field of interest. It is the aim of Central Piedmont Community College to provide quality instruction in these areas for transfer credit to senior institutions. Central Piedmont Community College provides professional counseling and a faculty advisory system to help the student plan his program for transfer to the college or university of his choice.

### General Information

The student should consult the general information brochure for general school policies. The following information is especially relevant to the program.

## **Admission**

The student should forward, as early as possible in advance of the date of registration, an application and a high school transcript to the Office of Student Services. Transcripts of any completed college work should be received prior to registration. While students may be processed to the date of registration, an early application assures adequate time for processing and counseling.

Central Piedmont Community College follows an "open door" policy and does not impose restrictive standards for admission to the College. All degree curricula, however, require high school graduation or the equivalent. Before any student is permitted to register for classes leading to a degree, he must take the School and College Ability Test (SCAT), a mathematics test and an English test. A student with satisfactory scores will be permitted to enter the curriculum of his choice. When scores on the tests indicate a lack of readiness to commence college-level work, the student will be assigned to courses in the advancement studies department.

## **Units of Credit and Course Descriptions**

Central Piedmont Community College is on a quarter system. One unit of credit is equal to one class-hour meeting per week. In the section on course descriptions in subsequent pages, there appear the course number, the title of the course and the hours of credit for the course. The number of lecture hours and the number of laboratory hours are shown in parentheses. When the laboratory is required, one credit hour will equal at least two hours of laboratory time, as appropriate to the course. The letters P.R. indicate the prerequisite. The letters C.R. indicate a corequisite of the course. Either may be waived by the Liberal Arts Vice-President.

## **Probation**

If a student has a cumulative quality-point average of 2.0 at the end of any quarter, he will be asked to report to his adviser for counseling. The counselor will attempt to identify the problems of the student, and he may direct the student to a program for which he is better qualified.

## **Requirements for the Degree**

The student must complete a minimum of ninety-six quarter hours of course work to qualify for the Associate Degree. The student must have a quality-point average of 2.0 (or "C") to be eligible for graduation.

The student is eligible for the Associate in Arts Degree when he has completed the required ninety-six quarter hours for graduation, including the minimum hours in each area listed below.

Communications	9 Quarter Hours
English Composition 1304, 1305, 1306 (Required of all students.)	
Humanities	9 Quarter Hours
This requirement is met by a sequence in language or some combination of courses in the following areas: Literature, Philosophy, Art or Music.	
Social Science	10 Quarter Hours
Biological Science, Physical Science and Mathematics	20 Quarter Hours

The requirement is met by taking a minimum of two of the three fields.

At least one year (ten hours) must be taken in a laboratory science, either biological or physical.

## Sample Two-Year Curricula For Liberal Arts and Certain Pre-Professional Areas

**NOTE:** These are sample curricula patterns. They are not meant to be prescriptive for any particular student, nor are they minimum requirements. An individual student's schedule may vary from these modal patterns. Each student will structure his own curricular pattern in conference with his adviser. His high school background, scholastic aptitude, vocational goal and choice of a four-year college or university (to which he plans to transfer) will be considered as factors shaping his particular curricular design.

<b>Liberal Arts</b>	<b>Quarter Hours of Credit</b>
English Composition	9
World Civilization	10
Literature (ENG 2504, 2505, or ENG 2514, 2515)	10
Modern Language (through Intermediate)	9 to 18
Mathematics 1504, 1505*, or 1514, 1515	10
Laboratory Science	20
Elective in Major	15
Free electives to complete 96 hours	
*Math. 1504, 1505 not applicable to mathematics major	
 <b>Pre-Agriculture (and Forestry)</b>	
English Composition	9
Mathematics (1524 level and above)	15
History	10
Biology	15
Social Science Electives	10
Modern Language or Humanities	9 or 10
General Chemistry	15
Economics	9
Electives to complete 96 hours	
<b>Pre-Business and Public Administration</b>	
English Composition	9
History	10
Psychology	5
Economics	9
Mathematics (through 1516)	10 or 15*
Laboratory Science	10*
Modern Language (through Intermediate)	9
Accounting	12
Business Electives	9
Social Science electives to complete 96 hours	
*A total of 20 hours of mathematics and laboratory science is suggested	
 <b>Pre-Dental</b>	
English Composition	9
World Civilization	10
Modern Language or Humanities	10
Mathematics (1514 level and above)	10
General Chemistry	15
Organic Chemistry	12
Biological Sciences	10
Psychology	5
Electives to complete 96 hours	
 <b>Pre-Engineering</b>	
English Composition	9
World Civilization	10
Humanities	10
Mathematics (1524 level and above)	20
General Chemistry	15
General Physics	15
Economics	9

	<b>Quarter Hours of Credit</b>
<b>Pre-Journalism</b>	
English Composition	9
History	10
American Government	5
Psychology	5
Economics	9
Mathematics	10
Laboratory Science	10
Modern Language (through Intermediate)	9 to 18
Literature (ENG 2504, 2505, or 2514, 2515)	10
Speech	3
Social Science Electives	10
Free electives to complete 96 hours	
<b>Pre-Law</b>	
English Composition	9
Modern Language (through Intermediate)	9 to 18
Laboratory Science	10
Mathematics	10
History	10
Political Science	15
Economics	9
Sociology	9
Speech	6
Psychology	5
Literature	5
Electives to complete 96 hours	
<b>Pre-Medical</b>	
English Composition	9
World Civilization	10
Modern Language (through Intermediate)	9 to 18
Mathematics (1524 level and above)	10
General Chemistry	15
Organic Chemistry	12
Biological Sciences	20
General Psychology	5
Science electives to complete 96 hours	
<b>Pre-Optometry</b>	
English Composition (1304, 1305, 1306)	9
Math (1524, 2504)	10
Biological Science (1500, 1502, 1504)	15
Chemistry (1504, 1505, 1506, 2614)	21
Physics (2504, 2505, 2506)	15
Humanities or Social Studies	10
Sociology	5
Psychology (2504, 2505)	10
*Modern Language	
Electives to complete hours (From Mathematics, Sciences, or Social Studies)	
*Check catalog of college of optometry to which student plans transfer upon graduation from CPCC. Requirements will vary.	
<b>Pre-Pharmacology (one year only, except under special advisement)</b>	
English Composition	9
World Civilization	10
Foreign Language (through Intermediate)	9 to 18
Mathematics (1514 level and above)	10
General Chemistry	15
<b>Pre-Social Work</b>	
English Composition	9
World Civilization	10
Laboratory Science	10
Mathematics	10
Modern Language or Humanities	10
Speech	6
Sociology	10
Psychology	10
Political Science	10
Electives to complete 96 hours	

	Quarter Hours of Credit
<b>*Pre-Teaching (Elementary)</b>	
English Composition	9
World Civilization	10
Geography	5 to 10
Mathematics	10
Laboratory Science	10
Art	3 to 9
Music	3
American History	10
Political Science	5
Modern Language or Humanities	10
Introduction to Education	5
Educational Psychology	5
General Psychology	5
Electives to complete 96 hours	
*Check catalog of senior institution to which student plans transfer upon graduation from CPCC. Requirements will vary.	

<b>Pre-Teaching (Secondary)</b>	
English Composition	9
World Civilization	10
American History	10
Mathematics*	10
Laboratory Science	10
Speech	6
Modern Language or Humanities	10
Introduction to Education	5
General Psychology	5
Educational Psychology	5
Major electives to complete 96 hours	

<b>Pre-Textile</b>	
English Composition (1304, 1305, 1306)	9
English Elective	5
General Chemistry (1504, 1505, 1506)**	15
Mathematics (1524, 2504, 2505, 2506)	20
General Physics (2504, 2505, 2506)	15
American Government	5
History Elective	5
Humanity or Social Science elective	15
Physical Education	6

\*Math. 1504, 1505 will suffice for many non-math majors. However, persons planning to major in math or physical science should begin with Math. 1524.

\*\*Students interested in Textile Chemistry should add Chemistry 2604, 2614, 2615.

The community college advisory committee, including representatives of state-supported colleges and the University, has worked with the Department of Community Colleges and Central Piedmont Community College to assist in the development of curricula acceptable to the senior institutions of the state. Consequently, courses taken at Central Piedmont Community College should transfer in grade and credit to the institution as applicable to the curriculum for which such courses were intended. The student is able to transfer to the senior institution with junior status after completing two years of credit work at Central Piedmont Community College. Counselors and faculty members are ready to assist the student in course selection. It is the responsibility of the student, however, to familiarize himself with the catalog of the senior institution to which he will transfer, and to make periodic checks of his progress while completing freshman and sophomore requirements.

## Liberal Arts

### Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description are additional numbers. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

On the following pages are descriptions of courses by departments.



## Accounting

The accounting courses are designed to develop the student's knowledge and understanding of the fundamental and advanced principles and concepts of accounting; to develop manual skills in recording and in machine operation as needed on the job; and, to familiarize the student with the areas in which accounting is used, its importance in business, and the manner in which all areas of business depend on accounting records as a strong tool.

**BUS 1604 Principles of Accounting I:** A study of basic accounting principles covering the complete accounting cycle for a proprietorship. Accounting for notes, interest, inventories, depreciation and payrolls is covered. Preparation of worksheets and financial statements is stressed. (5—2) 6

**BUS 1605 Principles of Accounting II:** Emphasis is placed on recording, summarizing and interpreting data for management control rather than on book-keeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. The partnership and corporate forms of business are studied. P.R. BUS 1604 or consent. (5—2) 6

**BUS 2626 Intermediate Accounting I:** An introduction to and review of fundamental processes of accounting. Emphasis is placed upon a thorough working knowledge and understanding of financial statements. Individual items in the balance sheet and income statement are analyzed and evaluated. P.R. BUS 1605 or consent. (5—2) 6

**BUS 2627 Intermediate Accounting II:** A continuation of the study begun in BUS 2626. The application of accounting principles and concepts to account evaluation and income determination is emphasized. Special problems peculiar to corporations and analyses of financial reports are considered. P.R. BUS 2626 or consent. (5—2) 6

**MAT 1300 Business Mathematics:** A review of basic mathematics in business; interest and bank discounts, payroll records, taxes, retailing costs, markups and discounts, compound interest and annuities. (3—0) 3

## Biology



The biology curriculum is designed to prepare students for professional careers in the life sciences and related areas; to teach students to apply the scientific method, to think logically and systematically, to have an open-minded attitude in interpreting data and to be thorough in considering all aspects of a problem; to impart knowledge of the fauna and flora of our region for aesthetic as well as functional usage; to understand the role of the life sciences in mastering environments; to help students recognize themselves as highly complex members of the living world for which they are responsible; to help students become more knowledgeable citizens, parents, and leaders.

**BIO 1500 Biological Science:** A foundation course designed to introduce the fundamentals of biological sciences—principles and theories, the nature of matter, the organization of protoplasm, a brief survey of plant and animal kingdoms, metabolism, growth, reproduction, responsiveness, adaptation and evolution. (3—4) 5

**BIO 1501 General Botany:** An introductory study of the structure, physiology, reproduction and taxonomy of green and non-green plants, and a survey of plant genetics and ecology. (3—4) 5

**BIO 1502 General Zoology:** A study of the chief groups of animals in evolutionary sequence and a survey of animal histology, physiology, homology, ecology, and taxonomy. Laboratory studies of typical animal groups. (3—4) 5

**BIO 1503 General Bacteriology (Microbiology):** An introductory course in general bacteriology with a survey of microscopic plant and animal forms with emphasis upon the morphology, physiology and ecology of bacteria. The nature and activities of common micro-organisms of humans, soil, water, food and milk. (3—4) 5

**BIO 1504 Human Anatomy and Physiology I:** A study of the structure and normal functions of the human body and its systems with emphasis upon the interrelated functions of various parts and systematic processes in the development of basic physiological principles. (3—4) 5

**BIO 1505 Human Anatomy and Physiology II:** A continuation of BIO 1504. P.R. BIO 1504 or consent. (3—4) 5

**BIO 2300 Genetics:** An introduction to the principles of genetics and the application of those principles to the human race (3—0) 3

**BIO 2304 Human Nutrition:** The basic principles of nutrition in relation to health and disease. P.R. CHM 2405 or consent. (3—0) 3

**BIO 2500 Introduction to Entomology:** A basic course designed to cover the fundamentals of insect classification, development, food habits and controls. (3—4) 5

**BIO 2504 Selected Topics in Biology:** This course is offered in order to comply with the needs of students who want subject matter not included in the other courses offered by the biology department. A minimum of eight (8) students who agree on the selection of the subject is required. Among topics that may be selected are the following: Animal Behavior, Embryology, Histology, Marine Biology, Ornithology, Parasitology, Physiology, Crop Plants, Local Flora, Plant Anatomy, and Plant Morphology. P.R. Consent of the department. (3—4) 5

**BIO 2514 Vertebrate Zoology:** An introduction to vertebrate fauna with emphasis on life history, ecology, systematics and behavior. Includes principles of vertebrate anatomy, physiology, histology, embryology, classification and homology. P.R. BIO 1500 or consent. (3—4) 5

**BIO 2524 General Ecology:** A study of the structure and function of nature. Emphasis is placed upon energy flow, biogeochemical cycles, relationships, habitats and economic importance of organisms. P.R. BIO 1501 and BIO 1502 or consent. (3—4) 5

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## Business Administration

The business administration courses are designed to provide the student with a broad, general knowledge of business law, business organization, and human relations in business. Most of the courses in the business area are core courses for other areas of study.

**BUS 1400 Introduction to Business:** A comprehensive introduction to business operations and organization with an analysis of forms of business ownership, business functions and problems of management. (3—2) 4

**BUS 2300 Business Management:** A study in depth of the principles of management. The major functions of planning, organizing, staffing, directing and controlling a firm's operations are carefully organized. Case studies and a company analysis are integral parts of the course. (3—0) 3

**BUS 2304 Business Law I:** A general course to acquaint the student with our court system and the fundamentals of business law on contracts, negotiable instruments and agency. Uniform Commercial Code is considered whenever applicable. (3—0) 3

**BUS 2305 Business Law II:** A continuing study of business laws governing sales, bailments, partnerships, corporations, insurance and property. The Uniform Commercial Code is considered wherever applicable. P.R. BUS 2304 or consent. (3—0) 3

**BUS 2306 Business Law III:** A continuing study of business laws, including the Uniform Commercial Code, governing partnerships, corporations, estates and bankruptcy, government and business, and real property. P.R. BUS 2304 and BUS 2305 or consent. (3—0) 3

**Communications**  
**English Composition**  
**Speech**



The courses are designed to help the student improve his written and oral communication skills. He reads to observe the development of ideas by various techniques of expression, and he engages in class discussion to find a logical relationship between idea and expression. He writes and speaks to develop his own skill in clear, accurate, and effective expression.

**English Composition**

**ENG 1304 English Composition I:** Study of expository writing based on reading and class discussion; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods. P.R. Placement examination or consent. (3-0) 3

**ENG 1305 English Composition II:** Continuing study of composition based on ideas in the short story and the novel, emphasizing the techniques of analysis and synthesis in writing. P.R. ENG 1304 or consent. (3-0) 3

**ENG 1306 English Composition III:** Intensive study of composition, emphasizing the critical reading of drama and poetry, leading into the basic techniques of research, and culminating in a formally documented research paper. P.R. ENG 1305 or consent. (3-0) 3

**ENG 1314 Journalism:** Study of basic journalistic principles with emphasis on newspaper reporting. Practice in writing news stories, feature stories, sports stories, and editorials is provided through producing the weekly school newspaper. P.R. ENG 1304 or 3304 or consent. (1-4) 3

**ENG 1324 Creative Writing:** The craft of writing is practiced in a range of assignments: prose, fiction, fantasy, exposition of a literary theme, autobiography, and the informal essay. Student papers are read in class, and discussion probes the practical aspects of technique and development. P.R. ENG 1305 or consent. (3-0) 3

**ENG 2309 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to meet a particular need not met by other offerings of the Communications Department. Each student works under the supervision of a member of the Communications Department. P.R. approval of the sponsoring instructor and of the chairman of the department. (3-0) 3

**Speech**

**SPH 1300 Oral Communications:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3-0) 3

**SPH 2101 Parliamentary Procedure:** The study and practice of parliamentary procedure to enable the student to participate actively in business, professional, labor, service, and fraternal organizations. (1-0) 1

**SPH 2300 Voice and Diction:** Personal speech improvement, dealing with voice and articulation and how speech sounds are made. Application of study through class participation to enable the student to correct speech problems and improve diction. (3-0) 3

**SPH 2304 Public Speaking:** Study of the mechanics of speaking before an audience; adaptation of method of purpose; practice in different types of speeches, such as extemporaneous, impromptu, prepared, and memorized. P.R. SPH 1300 or consent. (3-0) 3



## Economics

The economics courses are designed to develop the student's knowledge and understanding of the American economy. All areas of economics are covered from the historical development of economic thought to current economic problems.

**ECO 2300 Economics I:** Development of economic thought, measurement of national income, theory of national income determination, and importance of money supply and fiscal policy are included. (3-0) 3

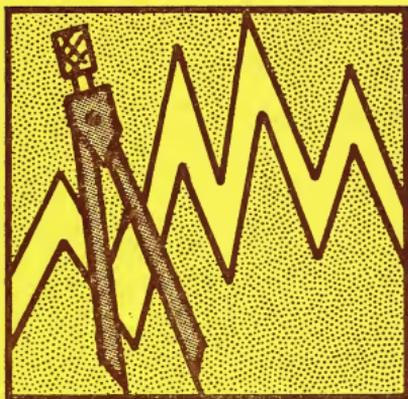
**ECO 2301 Economics II:** The role of the price system in society is reviewed, including how it affects the allocation of resources and the behavior of consumers and firms. (3-0) 3

**ECO 2304 Economics III:** Economic problems and issues, including foreign trade and comparative economic systems are reviewed. The problems of poverty, ecology, housing, education, and aging along with possible solutions are discussed. (3-0) 3



## Electronic Data Processing Department

The Electronic Data Processing department offers courses for college transfer students to meet Computer Science requirement and/or to use as electives. As a student you should see an advisor or counselor in your major area or a member of the electronic data processing faculty to determine the appropriate sequence to meet your objectives.



**EDP 1304 Computer Concepts & Fortran Programming:** A study of digital computer concepts, algorithms, and computer programming. The student will write and document Fortran programs for computer solution of various algorithms. Also, prewritten programs will be examined and utilized in problem solution. (2—2) 3

**EDP 1305 Fortran Programming:** A study of algorithms and an extensive coverage of the Fortran Language and programming techniques. Students will write and document computer programs for solving various problems. P.R. EDP 1304, MAT 1505 or MAT 1514 or consent. (2—2) 3

**EDP 2306 Computer Programming I (Business):** A study of computer programming and use for business students. After an introduction to computer systems, students will develop program logic and write programs for solving sample business problems. Also, various packaged or prewritten programs will be examined and utilized in problem solution as applied to business data processing. (2—2) 3

**EDP 2307 Computer Programming II (Business):** A study of the Cobol Language and programming for business students. Included will be programming techniques and procedures for tape and disk, as well as utilization of several utility programs as applicable to file processing. Students will develop program logic and write programs for solving sample business problems. P.R. EDP 2306. (2—2) 3

**EDP 2308 Computer Systems & Assembly Language I:** A study of the functional operation & structure of a computer system using the assembly language. Included in this study will be an introduction to control programs concepts. The student will write and document language programs, illustrating various features of the computer system as well as application type programs. P.R. EDP 1305 or EDP 2307. (2—2) 3

**EDP 2309 Computer System & Assembly Language II:** A continuation of EDP 2308. A study of the functional operation and structure of a computer system using the assembly language. Included in this course is a study of control programs and their functional concepts of a computer system. The student will write and document assembly language programs illustrating various features of the computer system as well as application type programs. P.R. EDP 2308. (2—2) 3

**EDP 2514 Statistical and Numerical Programming:** A study of the mathematical principles upon which many computing methods are based. This course provides the student with a knowledge of programming concepts, as applied to numerical and statistical techniques in scientific applications. Topics include matrix algebra, interpolation methods, series analysis, numerical integration and differentiation, and the simplex method. The student will write and document programs using the computer for problem solution involving numerical and statistical methods. P.R. EDP 1305, MAT 2504. (4—2) 5

## Fine Arts

### Art

### Drama

### Music

The department of Fine Arts seeks to provide an atmosphere of creative excitement reflecting the enthusiasm of teacher and institution which will increase student sensitivity. Instruction and facilities are provided for maximum development of a wide range of individual interest and aptitudes in creative arts. Opportunity for growth in skills and appreciation are offered for both the beginning and experienced student.



### Art

The Art Department seeks to provide an environment for the student including both instruction and experience which will enable him to define the statements he wishes to make and to equip him with the skills to make them. The broad range of courses offered seeks to provide for the wide variety of experience, interest, aptitude, and purpose of students.

**ART 1300 Introduction to Art I:** A course designed to orient the student in the role of the visual arts as a significant factor in the creation of our environment. The development of a vocabulary and a basis for intelligent communication on the arts through the use of texts, audiovisual materials and field trips.

(3—0) 3

**ART 1301 Introduction to Art II:** An introduction to materials, tools and techniques of art through first-hand experience and the use of audio-visual materials and demonstrations. Exploration into function, philosophy, psychology, etc. involved in the major visual arts.

(3—0) 3

**ART 1302 Children's Art:** An introductory study of the materials, tools, techniques, purpose, philosophy and function of art for the young child and the supervision of their art activities.

(2—2) 3

**ART 1310 History of Art I:** A survey of the major visual arts and the influence of the historical past on the concepts and form of contemporary creative endeavor. Prehistoric through Early Gothic.

(3—0) 3

**ART 1311 History of Art II:** A survey of the major arts and the influence of the historical past on the concepts and form of contemporary creative endeavor. The Late Gothic through Renaissance to Baroque.

(3—0) 3

**ART 1312 History of Art III:** A survey of the major arts and the influence of the historical past on the concepts and form of contemporary creative endeavor. Neoclassicism and Romanticism through the twentieth century.

(3—0) 3

## Applied Art

- ART 1303 Woodcut:** Design, cutting and printing in various relief techniques, including woodcut and Lino cut. (0-6) 3
- ART 1304 General Drawing I:** General Drawing introduces the student to problems and their possible solutions in representing visual experience on the two dimensional surface. Explores a variety of materials and techniques with emphasis on experimentation in utilizing these materials and techniques as a means of personal expression. (0-6) 3
- ART 1305 General Drawing II:** Explores perspective and some of the more systemized methods of rendering the illusion of form and space in drawing. Pictorial functions of the elements of design. Continues to develop technical competence in use of variety of materials and techniques. P.R. ART 1304 or consent. (0-6) 3
- ART 1306 General Drawing III:** Emphasizes drawing as a means of making personal visual statements. Emphasis on helping individuals establish both direction and method in their work. P.R. ART 1305 or consent. (0-6) 3
- ART 1320 Etching:** Designing and producing prints in a variety of etching and engraving techniques. (0-6) 3
- ART 1321 Serigraphy:** Silk screen as an art form. Experience in equipment construction, techniques, and processes in screen preparation including tusche, glue, crayon and paper, and the design and production of prints. (0-6) 3
- ART 1322 Crafts:** Experimentation in a variety of crafts—including stitchery, macrame, hand-weaving, tie dyeing, and batik. (0-6) 3
- ART 1324 Design I:** Principles and elements of design related to the two dimensional surface. Flat pattern development, pictorial composition, nature and the use of color are emphasized. (0-6) 3
- ART 1325 Design II:** Continuing study of the principles and elements (including motion) as applied to 3 dimensional works of art. Emphasizes relationship of forms in space. Uses variety of tools, materials and techniques to create 3 dimensional constructions. P.R. ART 1324 or consent. (0-6) 3
- ART 1326 Design III:** Application of principles and skills to produce both 2 and 3 dimensional designs in response to student's individual needs and interests. P.R. ART 1325 or consent. (0-6) 3
- ART 1327 Sculpture I:** Experimentation with various materials and methods of sculpture. Emphasis is on modeling and casting. (0-6) 3
- ART 1328 Sculpture II:** Experimentation with various materials and methods of sculpture. Emphasis on production of finished work in the areas of wood carving, stone carving. P.R. ART 1327 or consent. (0-6) 3
- ART 1329 Sculpture III:** Individual investigation and work in modeling, casting, carving and construction including recently developed media. P.R. ART 1328 or consent. (0-6) 3
- ART 1334 Painting I:** Introduction to elements of art and principles of design as applied to the production of paintings. Experimentation in a variety of media with special attention to composition. (0-6) 3
- ART 1335 Painting II:** Use of oils, acrylics, watercolor and other brush and liquid combinations. Experience in choice and preparation of working surfaces, framing and matting. P.R. ART 1334 or consent. (0-6) 3
- ART 1336 Painting III:** Special attention is given to the students' development of individual direction in the techniques of their major interest. P.R. ART 1335 or consent. (0-6) 3
- ART 1364 Ceramics I:** Introduction to principles and various methods of forming clay-ware. Coil, slab, molding, wheel throwing, firing and glazing. (0-6) 3
- ART 1365 Ceramics II:** Work on wheel-thrown pieces with emphasis on form and surface of the piece. Various temperature glazes, clays and treatment. P.R. ART 1364 or consent. (0-6) 3
- ART 1366 Ceramics III:** Relates material, form and decoration in ceramics. Design and building of sculptural forms in addition to wheel-thrown pieces. P.R. ART 1365 or consent. (0-6) 3
- ART 1374 Jewelry I:** Basic experience in design and production of metal jewelry. Includes cutting, carving, soldering, stone mounting, polishing, etc. (0-6) 3
- ART 1375 Jewelry II:** Continuing work from ART 1374 in basic jewelry techniques with addition of centrifugal casting. P.R. ART 1374 or consent. (0-6) 3
- ART 1376 Jewelry III:** Design and production of jewelry as related to material, function, and individual approach of student. P.R. ART 1375 or consent. (0-6) 3



## Drama

The Drama program permits the student to learn theater practices and theories by involving him in regular college theater productions. He has the opportunity to learn basic backstage procedures in addition to acting in plays. Basic theater courses in play production, stagecraft, theater history, acting, and scene design are open to all students. The college theater productions are correlated with course activities whenever possible.

**DRA 1300 Introduction to Drama:** Study of the theater, of the nature of the drama and the principles of play analysis, and of the fundamentals of technical production. (3—0) 3

**DRA 1301 Stagecraft:** Study of the theater building and its equipment and of working drawings and scene shop organization. Practice in scenery construction and painting. Participation on technical crews of the college theater production required. (1—4) 3

**DRA 1302 Scene Design:** Practical research and development of scene designs for a variety of presentation styles and theater stages. Current productions will be used for design practice whenever possible. (1—4) 3

**DRA 1303 Acting:** Practice in developing and controlling the voice and body as instruments of expression; emphasis on theater speech and movement. Freeing and use of the individual's imaginative resources and critical faculties through controlled practice. (1—4) 3

**DRA 1304 Play Production:** Study of basic principle and technical problems of acting, stagecraft, and play production. The laboratory consists of the rehearsing and presentation of plays for the student body, the public, and interschool exchange. (1—4) 3





## Music

The music courses are designed to provide opportunities to the greatest number of students to share in the heritage of musical culture and skills. Emphasis is placed on creative participation in performance and upon music as a medium of communication. Music is also studied as a reflection of the cultures that created it—whether present or past.

NOTE: (1) A maximum of six quarter hours of applied vocal and/or instrumental may be counted toward an A.A. degree.

NOTE: (2) A maximum of six quarter hours of choral and/or instrumental ensemble may be counted toward an A.A. degree.

- MUS 1100 Men's Choir:** Open to all Male students. (credit cumulative, not to exceed six quarter hours. Does not satisfy humanities requirement.) Choral Ensemble. (0—3) 1
- MUS 1101 Women's Glee Club:** Open to all women. (Credit cumulative, not to exceed three quarter hours. Does not satisfy humanities requirement.) Choral Ensemble. (0—3) 1
- MUS 1104 Class Voice I:** Group instruction in the principles of voice production and expressive singing together with a survey of solo song literature. (Does not satisfy humanities requirement.) (1—0) 1
- MUS 1105 Class Voice II:** A continuation of MUS 1104 in a study of the principles of voice production and expressive singing. (Does not satisfy humanities requirement.) P.R. MUS 1104 or consent. (1—0) 1
- MUS 1106 Class Voice III:** A continuation of MUS 1105 in a study of the principles of voice production and expressive singing. (Does not satisfy humanities requirement.) P.R. MUS 1105 or consent. (1—0) 1
- MUS 1107 Chamber Choir:** Participants selected by audition. (Credit cumulative, not to exceed six quarter hours. Does not satisfy humanities requirement.) Choral Ensemble. (0—3) 1
- MUS 1110 Folk Guitar:** A study of the principles and techniques of folk guitar playing. (0—3) 1
- MUS 1111 Classical and Flamenco Guitar:** A study of the principles and techniques of classical and flamenco guitar playing. (0—3) 1
- MUS 1112 Orchestral Strings:** A study of the principles and techniques of playing the violin, viola, cello and double bass. (0—3) 1
- MUS 1114 Class Piano I:** Group instruction in the principles and techniques of piano playing for beginning students. (Does not satisfy humanities requirement.) (0—3) 1
- MUS 1115 Class Piano II:** A continuation of MUS 1114 in the principles and techniques of piano playing. (Does not satisfy humanities requirement.) P.R. MUS 1114 or consent. (0—3) 1
- MUS 1116 Class Piano III:** A continuation of MUS 1115 in the principles and techniques of piano playing. (Does not satisfy humanities requirement.) P.R. MUS 1115 or consent. (0—3) 1
- MUS 1117 Wind Ensemble:** An organization designed to provide the opportunity for wind instrument players to continue the study of their particular instruments and to become familiar, through ensemble performance with music of various composers, periods and styles. (Credit cumulative, not to exceed three quarter hours. Does not satisfy humanities requirement.) P.R. Consent. (0—3) 1

- MUS 1127 Orchestra:** An organization designed to provide continuing performance opportunity for students who have already developed some skills on an orchestral instrument. Emphasis will be placed on further development of students playing ability and an acquaintance with orchestral literature. (0-3) 1
- MUS 1134 Concert Band:** An organization designed to provide continuing performance opportunity for students who have already developed skills on a band instrument. Emphasis will be placed on further development of skills on particular instruments as well as acquaintance with concert band literature. P.R. Consent. (0-4) 1
- MUS 1300 Introduction to Music I:** An introductory study of the fundamentals of music with concentration on development of basic minimal skills in reading and composing rhythms and melodies, and including performance experience on the recorder. (3-0) 3
- MUS 1301 Introduction to Music II:** An introductory study of the fundamentals of music with emphasis upon harmony and including performance experience on the piano and the guitar. (3-0) 3
- MUS 1304 Children's Music I:** An introductory study of fundamentals of music, with concentration on development of basic skills in reading and performing (singing, percussion instruments, keyboard). Also included will be a study of children's song literature and observation in the Child Care Training Center. (3-0) 3
- MUS 1305 Children's Music II:** A continuation of MUS 1304. Also a brief study of children's song literature, recordings, basic physical rhythmic responses and group activities. Included will be internship practice in the Child Care Training Center. P.R. MUS 1304. (3-0) 3
- MUS 1310 Introduction to Music Theory:** An introductory study of the fundamentals of music with emphasis on notation, intervals, keys, and triads, and incorporating practice in eartraining and sightsinging. (3-0) 3
- MUS 1314 Music Appreciation I:** A basic listening course designed to develop understanding and appreciation of the art of music and including a survey of all the periods of music history from the Middle Ages to the present. (for non-music major.) (3-0) 3
- MUS 1315 Music Appreciation II:** A basic listening course concentrating on the literature of the Baroque and/or Classical periods. P.R. MUS 1314 or consent. (3-0) 3
- MUS 1316 Music Appreciation III:** A basic listening course concentrating on the literature of the Romantic and/or Contemporary periods. P.R. MUS 1314 or consent. (3-0) 3
- MUS 1504 Music Theory I:** A study of the elements of music theory and harmony. P.R. MUS 1310 or consent. (5-0) 5
- MUS 1505 Music Theory II:** A continuation of MUS 1504 in a study of the elements of music theory and harmony. P.R. MUS 1504 or consent. (5-0) 5
- MUS 1506 Music Theory III:** A continuation of MUS 1505 in a study of the elements of music theory and harmony. P.R. MUS 1505 or consent. (5-0) 1
- MUS 2104 Advanced Applied Voice I:** Individual instruction in vocal techniques and study of vocal literature. (Credit cumulative, not to exceed six quarter hours. Does not satisfy humanities requirement.) P.R. MUS 1106 or consent. (1-0) 1
- MUS 2105 Advanced Applied Voice II:** A continuation of MUS 2104. P.R. MUS 2104. (1-0) 1
- MUS 2106 Advanced Applied Voice III:** A continuation of MUS 2105. P.R. MUS 2105. (1-0) 1
- MUS 2114 Advanced Class Piano I:** A continuation of MUS 1116 with emphasis on piano literature and musicianship. P.R. MUS 1116 or consent. (0-3) 1
- MUS 2115 Advanced Class Piano II:** A continuation of MUS 2114 with emphasis on piano literature and musicianship. P.R. MUS 2114 or consent. (0-3) 1
- MUS 2116 Advanced Class Piano III:** A continuation of MUS 2115 with emphasis on piano literature and musicianship. P.R. MUS 2115. (0-3) 1
- MUS 2117 Piano Ensemble:** An introductory study of piano literature which requires two or more persons performing on one or more pianos. P.R. MUS 2116 or consent. (0-3) 1
- MUS 2118 Jazz Piano:** A basic course in jazz piano including chord structure, voicing, progressions, rhythms, improvisation and variation. P.R. MUS 2116 or consent. (0-3) 1
- MUS 2204 Special Problems in Music:** An advanced problems course of independent study involving independent laboratory and library work. P.R. Approval of Department Chairman. (1-3) 2

**MUS 2304 History and Literature of Music I:** A survey of music from ancient times through the 16th century. Emphasis will be on music of the Middle Ages, Early Renaissance and Late Renaissance. P.R. A reading knowledge of music.

(3—0) 3

**MUS 2305 History and Literature of Music II:** A continuation of MUS 2304 covering the Baroque Era from 1600-1750 with special emphasis on Early Baroque and Bach and his contemporaries. P.R. MUS 2304 or consent.

(3—0) 3

**MUS 2306 History and Literature of Music III:** A continuation of MUS 2305 covering the period from 1750 to the present. Emphasis will be on the Classical Period and the Romantic Period and Twentieth Century Development. P.R. MUS 2305 or consent.

(3—0) 3

**MUS 2307 Advanced Music Theory I:** A continuation of the study of the elements of music theory and harmony. Melodic and harmonic dictation using chromatics and modulation. Harmonization of melodies, elementary composition, choral and instrumental arranging. P.R. MUS 1506 or consent.

(3—0) 3

**MUS 2308 Advanced Music Theory II:** A continuation of MUS 2307 with advanced techniques of ear training, composition and arranging. P.R. MUS 2307 or consent.

(3—0) 3

**MUS 2309 Advanced Music Theory III:** A continuation of MUS 2308 with an introduction to chromatic and contrapuntal elements of harmony. P.R. MUS 2308 or consent.

(3—0) 3





## Health And Recreation Department

The health education and recreation curriculum is designed to provide instruction which will lead to healthful living, and to provide experience in physical activities which will lead to acquisition of skill and fitness with leisure-time or recreational value. Note: A maximum of six quarter hours of Health Education and Recreation instruction may be counted toward the A.A. degree.

### Health

- HED 1100 Health Education I:** A study of some basic principles of health including personal and community hygiene. Topics presented include: physical fitness, community health safeguards, alcohol, drugs, tobacco, etc. (1-0) 1
- HED 1101 Health Education II:** Continuation of HED 1100. (1-0) 1
- HED 1102 Health Education III:** Continuation of HED 1101. (1-0) 1
- HED 1200 Public Health and Sanitation:** Basic information and orientation regarding sanitation and public health. Practices and principles related to the needs of children and adults. Topics presented include immunization, signs and symptoms of common communicable diseases, personal hygiene and cleanliness, elements of sanitation of food, water, and the environment. (2-0) 2
- HED 1204 First Aid I:** The purpose of first aid training is to acquire knowledge and skill for the emergency care of the sick and injured until a physician arrives, and to create an active interest in the prevention of accidents through the elimination of causes. The standard and advanced certificate will be awarded upon successful completion of the course. (2-0) 2
- HED 1205 First Aid II:** Advanced study beyond the advanced certification obtained in HED 1204. Successful completion of this course qualifies the individual as an instructor of first aid. P.R. HED 1204. (2-0) 2

### Recreation Skills

- REC 1100 Archery and Badminton:** Five weeks will be spent on each sport. Fundamentals of skill in using the bow and arrow and point-of-aim methods used in archery. Elementary skills for forehand, backhand and serve in badminton. Includes the developing of one's skills in these sports through individual instruction and participation. (Credit cumulative not to exceed three quarter hours.) (0-3) 1
- REC 1101 Tennis, Beginning and Advanced:** Elementary skills for ground strokes. Introduction of the serve, volley, smash and lob; rules and elementary strategy for singles and doubles. (Credit cumulative not to exceed 3 quarter hours.) (0-3) 1
- REC 1102 Fencing, Beginning and Advanced:** Introduction to the art of fencing. The emphasis will be on coordination and form. Foil techniques, rules and etiquette are included. The course is designed to develop personal interest in fencing as a leisure sport, also to prepare for competitive fencing (0-3) 1
- REC 1103 \*Bowling, Beginning and Advanced:** Instruction in skills, rules, and strategy through films, with an opportunity of participation at the bowling lanes. (Credit cumulative not to exceed three quarter hours.) (0-3) 1
- REC 1104 \*Water Skiing:** An introduction to the sport of water skiing. Includes care of equipment, safety and instruction and development of fundamental skills. P.R. Demonstrated swimming proficiency and consent. (Credit cumulative not to exceed one quarter hour.) (0-3) 1
- REC 1111 \*Snow Skiing, Beginning:** This course is designed to introduce the beginning skier to fundamental skiing techniques. The objective of the course is to develop skiing techniques in the following areas: christies, parallel skiing, basic jumps, and beginning vadals. (Credit cumulative not to exceed 3 quarter hours.) (0-3) 1
- REC 1114 \*Snow Skiing, Advanced:** This course is designed for advanced students in perfecting skills in the following areas: Slalom, down-hill racing, turns, and jumps. P.R. Beginning skiing or consent. (Credit cumulative not to exceed 3 quarter hours.) (0-3) 1

- REC 1120 Modern Dance:** A course designed to develop and improve fundamental skills in dance movements and techniques, and to encourage appreciation of dance as an art form and medium of education. (Credit cumulative not to exceed 3 quarter hours.) (0-3) 1
- REC 1122 Jazz Dance:** The most recent of dance forms, stemming from Ballet and the modern movement, influenced by the South American and the Negro. The basic jazz beats in the dance form. (Credit cumulative not to exceed 3 quarter hours.) (0-3) 1
- REC 1124 Swimming:** Basic strokes and water safety based upon American Red Cross programs of instruction. P.R. Consent. (Credit cumulative not to exceed 3 quarter hours.) (0-3) 1
- REC 1127 Social Dance, Beginning:** A course in the development and successful performance of dance skills with an accent on Social and Recreational values. Social dances covered will be Fox Trot, Waltz, Lindy, Cha-Cha, and Rumba. (0-3) 1
- REC 1128 Social Dance, Intermediate:** Continuation of REC 1127 with the addition of more difficult steps to the dances learned in that course. Introduction to the Tango, Samba, Mamba, Merengue and Discotheque. (0-3) 1
- REC 1129 Social Dance, Advanced:** Advanced study of popular social dances. Designed to instruct the experienced student in advanced steps and to polish the dancers technique. Social Dances to be introduced will include such novelty dances as the Charleston and the Polka. (0-3) 1
- REC 1130 Ballet:** Instruction to ballet technique and combinations. The work is progressive and continuous in perfecting technique and style. (Credit cumulative not to exceed 6 quarter hours.) (0-3) 1
- REC 1134 Basic Course of American Square Dancing:** A course consisting of the first 50 of the basic fundamental movements of square dancing that can be taught in one college quarter. It stresses the importance of dancing well, as emphasis is also placed on the smoothness in the dance. (0-3) 1
- REC 1135 Extended Basic Course of American Square Dancing:** The second or intermediate phase of the Square Dance Program. This course makes use of the next ten basic square dance movements and will include related round dances. (0-3) 1
- REC 1136 Advanced Basic Course of American Square Dancing:** This is the third or advanced phase of the square dance program which includes the final 15 to 20 basic movements including related round dances and some "experimental" movements. (0-3) 1
- REC 1137 Exploratory Square Dance Class:** This is a continuing or "terminal" class in which those who have completed the basic, extended basic, and advanced basic course may continue to dance and within a workshop structure explore new and experimental basic movements as they are developed and introduced into modern square dancing. (0-3) 1
- REC 1142 \*Volleyball and Weight Lifting:** Fundamental rules, skills and strategy. Introduces a systematic program of body conditioning through the use of weights. (Credit cumulative not to exceed 3 quarter hours.) (0-3) 1
- REC 1143 Gymnastics:** A course designed for teaching the fundamentals of gymnastics on the mats, parallel bars, side horse, and trampoline. (Credit cumulative not to exceed 3 quarter hours.) (0-3) 1
- REC 1144 \*Golf, Beginning:** Introduction to the fundamentals of the golf swing, game rules, and etiquette; emphasis on learning to swing properly, hit the ball, and putting it into practice on the golf course. (0-3) 1
- REC 1145 \*Golf, Intermediate:** Review of basic fundamentals of the golf swing; emphasis on short game (Chipping and Putting) and lowering your golf scores, plus practical playing experience. P.R. REC 1144 or equivalent. (0-3) 1
- REC 1146 \*Golf, Advanced:** Advanced instruction on special shots as deliberate hook or slice, sand shots, playing in the wind, tips to lower your scores, etc.; playing lessons on the golf course to teach putting all the shots together. P.R. REC 1145 or equivalent. (0-3) 1
- REC 1154 \*Scuba Diving:** An introduction to the sport of scuba diving. Includes care of equipment, safety instruction, and practice in underwater activity. P.R. Demonstrated swimming proficiency and consent. (Credit cumulative not to exceed one quarter hour.) (0-3) 1
- REC 1160 \*Horseback Riding, Beginning and Advanced:** A course in the fundamental skills and etiquette of riding. Instruction will include walking, trotting, cantering and jumping. (Credit cumulative not to exceed 3 quarter hours.) (0-3) 1

**REC 1161 Self Defense and Physical Conditioning:** An introduction to the art of self defense which includes techniques used in Judo, Ju Jitsu and Karate. Exercises designed to improve coordination and physical conditioning. (Credit cumulative not to exceed 3 quarter hours.) (0-3) 1

**REC 1164 Individual Activity:** Specialized activities approved by the Health Education and Recreation Department for a particular student. P.R. Consent. (0-3) 1

**REC 1181 Camping, Trailer:** Emphasis on skills and knowledge of outdoor living. Includes a study of where to camp, how to pick camp sites, trailer selection, and necessary equipment. (0-3) 1

**REC 1183 Outdoor Skills I (Basic):** To establish a basic understanding of hiking, shelter construction, free climbing, and rappeling. Each of these efforts are supported by classes on Physical Fitness, First Aid, C-P-R and equipment management. (0-3) 1

**REC 1184 Outdoor Skills II (Advanced):** The practical application of planning and the execution of all techniques necessary to accomplish 24 to 48 hour trips into the Linville Gorge, as well as trips on the Appalachian Trail. (0-3) 1

**REC 1304 Basic Photography:** Basic photography is designed to instruct the beginner in the basics of photography. Includes the use of the camera, exposure, composition, shooting techniques and basic darkroom procedure. (2-2) 3

**REC 1305 Intermediate Photography:** Intermediate Photography is to continue the training of the student photographer in photographic and darkroom techniques of a more advanced nature. This course is the basic course for branching into specific needs. P.R. REC 1304 or consent. (2-2) 3

**REC 1306 Advanced Photography:** Advanced Photography is designed to instruct the experienced student in advanced darkroom techniques. Specialized instruction in specific areas of photography and advanced critiques are provided. P.R. REC 1306 or consent. (2-2) 3

\*Self supporting course.



## Humanities Department

French  
Humanities  
Literature  
Philosophy  
Spanish

The courses in language and literature offer the student an opportunity to explore a wide range of ideas and values, to recognize his own needs as a human being, and ultimately to gain some perspective for making choices as an individual and as a member of society.



### French

- FRE 1300 Travel French:** Oral approach to comprehending and communicating in French. Practice in apt phrases for use in terminals, shops, restaurants, hotels, and other places. Tapes, filmstrips, movies, and extensive conversation in classroom. (Elective credit only.) (Does not satisfy humanities requirement.) (3—1) 3
- FRE 1304 \*Elementary French I:** Basic elements of French in conversation, reading, and writing for beginning students. (Does not satisfy humanities requirement.) (3—1) 3
- FRE 1305 \*Elementary French II:** Continuation of FRE 1304 in basic elements of French in conversation, reading, and writing. P.R. FRE 1304 or consent. (Does not satisfy humanities requirement.) (3—1) 3
- FRE 1306 \*Elementary French III:** Continuation of FRE 1305 in basic elements of French in conversation, reading, and writing. P.R. FRE 1305 or consent. (Does not satisfy humanities requirement.) (3—1) 3
- FRE 2307 Intermediate French I:** Intensive review of basic grammar and vocabulary combined with study of idiomatic forms and grammatical structures in dialogues and short stories. P.R. FRE 1306 or two high school units or consent. (3—1) 3
- FRE 2308 Intermediate French II:** Readings in French with emphasis on the culture, on the people and events that have determined the destinies of France from the beginnings to the present. This course is supplemented with filmstrips, slides, and movies. P.R. FRE 2307 or consent. (3—1) 3
- FRE 2309 Intermediate French III:** Selections from French literature: three novels or two novels and a play. Classroom discussions. P.R. FRE 2307 or consent. (3—1) 3
- FRE 2320 Special Topics:** An advanced course in which the students and the instructor select topics for independent study. Class meetings for oral reports and discussion. P.R. FRE 2308 or 2309 or consent. (3—0) 3

\*Students with two high school units in French may by-pass these courses.



## Humanities

- HUM 1304 Current Dramatic Events:** A study of six selected plays to develop understanding of drama as a performing art. The selection will include current performances in the Charlotte area. Students will have opportunities to discuss these productions with directors, critics, and actors. (3—0) 3
- HUM 1309 Contemporary Studies:** A study of the architecture, painting, sculpture, music, dance, drama, and movies of the present, with emphasis on the development of these arts since 1900. Personal experience with these art forms through trips to exhibits, concerts, plays, and movies. (3—0) 3
- HUM 1314 The Novel:** A study of five novels selected from French, British, American, Spanish, and Russian literature, with emphasis on idea, technique, and cultural tradition. Attention will be given to underlying similarities in all the novels as well as differences inherent in each. (3—0) 3
- HUM 1319 Mythology:** A study of myths and legends, chiefly Greek, Roman, and Norse. Literary use of myths by early and recent writers. Influence of myths on painting, sculpture, and music. (3—0) 3
- HUM 1500 Humanities I: Renaissance to Present:** A study of man as revealed in art, history, literature, music, and philosophy. Beginning with man's search for identity and meaning in this century, the course will explore earlier centuries for comparative study of contemporary problems and contemporary values. (5—0) 5
- HUM 1501 Humanities II: Classical and Medieval:** A study of ideas reflected in the art, history, literature, music, and philosophy of Classical and Medieval societies. Emphasis on man's assessment of his needs as a human being and man's effort to adjust his society and his arts to changing values. (5—0) 5

## Literature

- ENG 2314 Contemporary Literature:** Study of literature of the twentieth century, with emphasis on the short story and the novel in American and British literature. P.R. ENG 1306 or consent. (3—0) 3
- ENG 2324 The Bible as Literature:** Study of selections that approximate established genres of saga, chronicle, lyric poetry, oratory, short story, biography: emphasis on Judeo-Christian ideas influencing western literature. P.R. ENG 1306 or consent. (3—0) 3
- ENG 2504 Major British Writers I:** Masterpieces of British literature before 1800, with emphasis on Chaucer, Shakespeare, and Milton. P.R. ENG 1306 or consent. (5—0) 5
- ENG 2505 Major British Writers II:** Masterpieces of British literature since 1800, with emphasis on Romantic and Victorian poets. P.R. ENG 1306 or consent. (5—0) 5
- ENG 2514 Major American Writers I:** Selected complete works of major American authors before 1900: Poe, Hawthorne, Melville, Emerson, Thoreau, Whitman, Dickinson, Twain. P.R. ENG 1306 or consent. (5—0) 5
- ENG 2515 Major American Writers II:** Selected complete works of major Twentieth Century authors, with emphasis on their interpretation of the modern era. P.R. ENG 1306 or consent. (5—0) 5
- ENG 2534 World Masterpieces in Translation:** Study of selected masterpieces of world literature in translation, with emphasis on European literature. P.R. ENG 1306 or consent. (5—0) 5

## Philosophy

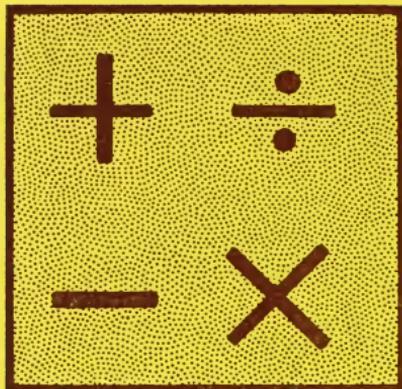
- PHI 1500 Introduction to Philosophy:** An introduction to the basic problems of human thought, emphasizing the philosophical systems dealing with these problems and their historical development. (5—0) 5
- PHI 2500 Logic:** An intensive study of the methodology of valid reasoning, including formal principles of deduction and induction. (5—0) 5

## Spanish

- SPA 1300 Travel Spanish:** Oral approach to comprehending and communicating in Spanish. Practice in apt phrases for use in terminals, shops, restaurants, hotels, and other places. Tapes, filmstrips, movies, and extensive conversation in classroom. (Elective credit only.) (Does not satisfy humanities requirement.) (3—1) 3
- SPA 1304 \*Elementary Spanish I:** Basic elements of Spanish in conversation, reading, and writing for beginning students. (Does not satisfy humanities requirement.) (3—1) 3
- SPA 1305 \*Elementary Spanish II:** Continuation of SPA 1304 in basic elements of Spanish in conversation, reading, and writing. P.R. SPA 1304 or consent. (Does not satisfy humanities requirement.) (3—1) 3
- SPA 1306 \*Elementary Spanish III:** Continuation of SPA 1305 in basic elements of Spanish in conversation, reading, and writing. P.R. SPA 1305 or consent. (Does not satisfy humanities requirement.) (3—1) 3
- SPA 2304 Intermediate Spanish I:** Oral work and reading of selections from Spanish literature. Intensive review of basic grammar. P.R. SPA 1306 or two high school units or consent. (3—1) 3
- SPA 2305 Intermediate Spanish II:** Continuation of Spanish 2304. Reading selections from Spanish literature, including one novel and one play. P.R. SPA 2304 or consent. (3—1) 3
- SPA 2306 Intermediate Spanish III:** Reading selections from Latin American literature. Emphasis on Latin American civilization. P.R. SPA 2304 or consent. (3—1) 3
- SPA 2320 Special Topics:** An advanced course in which the students and the instructor select topics for independent study. Class meetings for oral reports and discussion. P.R. SPA 2305 or 2306 or consent. (3—0) 3

\*Students with two high school units in Spanish may by-pass these courses.





## Mathematics

The mathematics department is designed to prepare students for professional careers in mathematics and related areas; to develop student knowledges and understandings of the fundamental principles and concepts of mathematics; to develop manipulative skills, and the ability to apply mathematics to physical situations.

**MAT 1504 Introduction to Mathematics I:** A first course in mathematics designed to give the essential mathematical background for college work in major fields other than mathematics, engineering or physical science. The course includes elementary set theory and logic; structure of the number systems—integers, rational, irrational, and complex numbers; reinforces the manipulative skills learned in elementary algebra. (Not applicable to mathematics or science majors.) P.R. Placement Examination or MAT 9310 or MAT 9302; C.R. MAT 9311 or high school geometry or consent. (5—0) 5

**MAT 1505 Introduction to Mathematics II:** A continuation of MAT 1504 designed to illustrate fundamental algebraic concepts deemed useful to individuals in a technological society. Course includes the study of functions, relations and inequalities, their solutions and graphs, systems of equations and an introduction to matrices, determinants, permutations and combinations. (Not applicable to mathematics or science majors.) P.R. MAT 1504 or consent. (5—0) 5

**MAT 1514 College Algebra:** The first of a two course sequence designed primarily to prepare students for the four quarter calculus sequence and additional work in mathematics. Includes the study of properties of real numbers, algebraic expressions, equations and inequalities in one, two and three variables, relations and functions, polynomial, exponential, and logarithmic functions. P.R. Placement Examination or consent; C.R. MAT 9311 or high school geometry or consent. (5—0) 5

**MAT 1515 Trigonometry:** The second of a two course sequence designed to prepare students for the four quarter calculus sequence and additional work in mathematics. Topics include the study of circular functions, trigonometric functions, inverse functions, matrices and determinants, complex numbers, linear systems, sequences, series and the binomial theorem. P.R. MAT 1505 or MAT 1514 or consent. (5—0) 5

**MAT 1516 Introductory Calculus:** This is a brief treatment of the calculus, for non-mathematical or non-science majors. Topics include the real numbers, functions, limits, derivatives and definite integrals, with applications to business and social science. P.R. MAT 1505 or consent. (5—0) 5

**MAT 1524 Analytic Geometry and Calculus I:** The first of a four course unified sequence of calculus. (This sequence is recommended for students in engineering, mathematics, and the physical sciences). Calculus I is a brief study of basic analytical geometry and a systematic treatment of differential calculus. A combination of theory and problem-solving techniques is developed through the four course sequence. P.R. MAT 1515 or consent. (5—1) 5

**MAT 2504 Analytic Geometry and Calculus II:** The second of a four course sequence. Topics include theoretical development of the definite integral, logarithmic, exponential, and trigonometric functions. A substantial part of the course deals with application of calculus techniques to finding area, volume, moments, center of gravity, arc length, and work. P.R. MAT 1524 or consent. (5—1) 5

**MAT 2505 Analytic Geometry and Calculus III:** The third of a four course sequence. A study of integration methods, approximate integration, polar coordinates, conic sections, vectors, hyperbolic functions, indeterminate forms, and improper integrals. P.R. MAT 2504 or consent. (5—1) 5

**MAT 2506 Analytic Geometry and Calculus IV:** The fourth of a four course sequence. Calculus IV is a study of three dimensional vectors, multi-variant calculus, multiple integration, and extensive theoretical-problematic consideration of series. P.R. MAT 2505 or consent. (5—1) 5

**MAT 2507 Matrices and Linear Algebra:** A study of vectors and matrices as mathematical systems and the application of these systems to other areas of mathematics and to the physical and social sciences. Topics include matrix algebra, abstract and geometric vectors, vector spaces, linear transformations and determinants. C.R. MAT 2504 or consent. (5—0) 5

**MAT 2514 Statistics I (5 quarter hours):** The basic ideas of statistics and probability are introduced by finite sample spaces. Some of the more specific topics to be included are: Data organization, analysis of data, normal distribution, random sampling, hypothesis testing. Student's t-distribution, linear regression and correlation, and time series. C.R. MAT 3505 or MAT 1505 or consent. (5—0) 5

**MAT 2415 Statistics II (4 quarter hours):** A continuation of MAT 2514 including such topics as nonparametric statistics, chi-square distribution, F-distribution, analysis of variance, probability, conditional probability, binominal distribution, polynomial regression, and multiple regression. Students are to select and present to the class an individual project. P.R. MAT 2514 or consent. (4—0) 4

## Physical Science

Chemistry  
Geography  
Geology  
Physics

The physical science courses are designed to prepare students for the professional careers in science and related areas, to teach the students to apply the scientific method, to think logically and systematically, to have an open-minded attitude in interpreting data, to be thorough in considering all aspects of a problem; to prepare people to live in a complex society; to impart knowledge of scientific facts; and to promote an understanding of the contributions that physical science has made and is making to the ability of man to master his environment.



### Chemistry

**CHM 1504 General Chemistry I:** A study of the fundamental postulates and laws of chemistry with emphasis upon the relationship of atomic structure to physical and chemical properties of the elements. C.R. MAT 1504 or MAT 3504 or consent. (3-4) 5

**CHM 1505 General Chemistry II:** A study of general chemistry with emphasis upon chemical equilibria, chemical kinetics, solution stoichiometry and electrochemistry, P.R. CHM 1504 or consent. (3-4) 5

**CHM 1506 General Chemistry III and Elementary Analysis:** General chemistry including qualitative analysis and emphasis upon ionic equilibria and relating chemical properties to atomic and molecular structure. Some quantitative analysis with and without instruments will be included. P.R. CHM 1505 or consent. (3-4) 5

**CHM 2304 Special Problems:** An advanced problem course of independent study in which a student selects an appropriate topic for research which has the approval of the department chairman. The research involves independent laboratory and library work. Only advanced students will be admitted. P.R. Consent of department chairman. (1-4) 3

**CHM 2404 Biochemistry I:** A basic course dealing with the inorganic and organic chemistry principles important to the chemistry of biological substance. P.R. High School Chemistry or consent. (3-2) 4

**CHM 2405 Biochemistry II:** A systematic treatment of the principles of Biochemistry as applied to the biological sciences and in particular to the health sciences. P.R. CHM 2404 or consent. (3-2) 4

**CHM 2604 Quantitative Chemical Analysis:** The theory of quantitative volumetric and gravimetric determinations, with emphasis upon the principles of precipitation, neutralization and oxidation and reduction applied to unknowns. Some instrumental methods are included. P.R. CHM 1506 or consent. (3-6) 6

**CHM 2614 Organic Chemistry I:** A systematic study of the basic theories, principles and techniques of organic chemistry and their application to reactions of aliphatic and aromatic compounds and natural products. Laboratory work in purification, characterization and synthesis of organic compounds. P.R. CHM 1506 or consent. (4-4) 6

**CHM 2615 Organic Chemistry II:** Continuation of CHM 2614 with a greater emphasis on instrumental analysis in laboratory. P.R. CHM 2614 or consent. (4-4) 6

## Geography

**GEO 1614 Introduction to Physical Geography:** A study of the basic physical elements of geography, emphasizing the climatic environment. C.R. MAT 9004 or consent. (5-2) 6

## Geology

**GEL 1604 Physical Geology:** An introductory course in geology, including the development of the earth, the origin of landforms, and the study of common rocks and minerals. C.R. MAT 9004 or consent. (5-2) 6

**GEL 2605 Historical Geology:** A study of the sequence of the geological periods, including the fossils and rock strata associated with the various periods. P.R. GEL 1604 or consent. (5-2) 6

**GEL 2614 Field Work in Geology:** Essentials of field observation in selected off-campus locations involving topographic map reading, mineralogy and other aspects of earth science. Credit granted upon completion and acceptance of a satisfactory written report. Requires full time of student for five weeks. P.R. GEL 1604 or GEO 1614 and permission of instructor. (0-12) 6

## Physics

**PHY 1404 Introduction to Physics I:** The first of a three quarter sequence designed primarily for students not majoring in engineering, mathematics or physical science. A study of the structure and states of matter and basic mechanical systems, with emphasis on the application of basic mathematics to theory. C.R. MAT 1504 or consent. (3-2) 4

**PHY 1405 Introduction to Physics II:** A continuation of PHY 1404 plus topics in the thermal properties of matter, behavior of fluids, and wave motion. P.R. PHY 1404 or consent. (3-2) 4

**PHY 1406 Introduction to Physics III:** A study of the structure of the atom, static and current electricity, and selected topics from atomic and nuclear physics. P.R. PHY 1405 or consent. (3-2) 4

**PHY 2504 General Physics I: Mechanics:** The first of a three quarter sequence designed primarily for students majoring in physical science, engineering or mathematics. Includes topics in kinematics and dynamic and static mechanical systems approached at a level requiring the use of calculus and vector analysis. P.R. MAT 1524 or consent. (3-4) 5

**PHY 2505 General Physics II: Heat, Sound and Light:** A continuation of PHY 2504. Areas of study include topics in molecular physics, wave mechanics, sound and geometric optics. P.R. PHY 2505 or consent. (3-4) 5

**PHY 2506 General Physics III: Electricity and Magnetism:** A continuation of PHY 2505. Topics studied include electric fields, current electricity, electromagnetic fields and AC theory. P.R. PHY 2505 or consent. (3-4) 5

**SCI 1404 \*Basic Physical Science I:** An integrated study of selected topics presented in logical order from physics, chemistry, geology, meteorology and astronomy with basic concepts emphasized. CR MAT 9004 or consent (3-2) 4

**SCI 1405 \*Basic Physical Science II:** Continuation of SCI 1404. P.R. SCI 1404 or consent. (3-2) 4

**SCI 1406 \*Basic Physical Science III:** Continuation of SCI 1405. P.R. SCI 1405 or consent. (3-2) 4

\*These courses should fulfill the physical-science requirement for liberal arts or education majors at many four-year institutions; however, these courses are not a substitute for chemistry or physics when they are stated as specific requirements.

## History Department

### History

### Political Science

The courses offered in this department have as their objective the broadening of the students' comprehension of themselves and the world. Emphasis is placed on enabling the students to acquire an insight into man's political, economic, social and cultural development.

### History

**HIS 1300 Afro-American History I:** Afro-American History general survey includes African history relative to slavery from 651 A.D. to 1460. Continuing developments in Afro-American history are traced until 1865. (3—0) 3

**HIS 1301—Afro-American History II:** Reconstruction through World War II (1945). Emphasis is placed on the interplay of the personalities and philosophies of Frederick Douglass, Joseph Price, Booker T. Washington, and W.E.B. Du Bois. (3—0) 3

**HIS 1302 Afro-American History III:** The Black Revolt, 1945 to the present. Black nationalism is traced through the ghetto development and legal procedures that culminated in the riots of 1964-1968. (3—0) 3

**HIS 1320 American History I:** A survey of the important events of the American development from the Age of Foreign Adventure to 1850. (3—0) 3

**HIS 1321 American History II:** The intermediate survey of the American development from 1850 to 1920. (3—0) 3

**HIS 1322 American History III:** The conclusion of the survey of the American development from 1920 to the present. (3—0) 3

**HIS 1500 World Civilization I:** A survey of the history of man—his political, social, religious, intellectual and artistic activities—from the earliest times to the seventeenth century in Europe, Asia and Africa. (5—0) 5

**HIS 1501 World Civilization II:** The concluding part of the survey of world civilization, including the trends from the seventeenth century to the present in Europe, Asia and the Americas. (5—0) 5

**HIS 2500 North Carolina History:** A survey of major historical, geographical, and governmental developments in North Carolina from the colonial era to the present. (5—0) 5

**HIS 2510 Survey of Latin American History:** A general introduction of Latin American politics, diplomacy, society, and culture from the beginnings of European colonization to the present. (5—0) 5

**HIS 2520 Survey of the Far East History:** A survey of the philosophical, economic, social, cultural, and political developments of China, Japan, India, Korea, and Southeast Asia from earliest times to the present with a view of the diplomatic contacts these civilizations have had with the West. (5—0) 5

### Political Science

**POL 1504 American Government I: National:** The constitution and legal bases of the national government in relation to its organization, powers, procedures and programs. Attention is given to the instrumentalities of popular control. (5—0) 5

**POL 1505 American Government II: State and Local:** The relationship of state government to the national government; state constitutions; the organization, powers, procedures and programs of the state government; the relationship of state and local governments; popular control in state and local governments. P.R. POL 1504 or consent. (5—0) 5

## Social Sciences

### Anthropology

### Education

### Psychology

### Sociology

The Social Science Department courses are designed to help the student understand the social, cultural, psychological, and educational growth and development of the society in which he participates and how to apply principles learned to modern life.

### Anthropology

**ANT 1500 General Anthropology:** An introductory course including human classification according to physical anthropology, the nature and development of culture and patterns of human behavior in simpler societies. (5—0) 5

### Education

**EDU 2500 Introduction to Education:** A first course in education surveying the history, development and present status of education in American society, with attention given to the objectives of democratic education and the role of the teacher in their implementation. (5—0) 5

### Psychology

**PSY 2500 Educational Psychology:** A study of the nature of the learning process with attention to inherited tendencies, habit and attitude formation, acquisition of skills, sense perception and retention. It includes a consideration of the elements of learning theory such as conditioning, association and insight. (5—0) 5

**PSY 2504 General Psychology:** A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements and theories of psychology. (5—0) 5

**PSY 2505 Human Development:** Development of the normal child and adolescent, with consideration of the social, biological and cultural influences upon growth. P.R. PSY 2504. (5—0) 5

**PSY 2514 Abnormal Psychology:** The biological, intellectual, cultural, and physiological dynamics of human behavior are examined with emphasis on deviant developmental patterns. P.R. PSY 2504 or consent. (5—0) 5

**PSY 2524 Mental Retardation:** To acquaint the student with the scope of the problem of mental retardation; methods of detection, treatment and education. P.R. PSY 2504. (5—0) 5

### Sociology

**SOC 1301 Group Interaction:** A course designed for training college student leaders. Emphasis is given to the study of group leadership processes, cohesiveness, and the dynamics of group interaction. (3—0) 3

**SOC 1500 Marriage and the Family:** Study of the American family with attention given to courtship, marriage, family relationships and interdependencies and social or cultural stresses emerging from contemporary family life. (5—0) 5

**SOC 2514 Introduction to Sociology:** An analysis of the society and culture dealing with social organization, control, institutions, stratification and social change. (5—0) 5

**SOC 2515 Social Problems:** A study of the major social problems of modern society, including family disorganization, minority groups and problems associated with industrial and urban development. P.R. SOC 2514 or consent. (5—0) 5

**SOC 2524 Special Problems of Sociology:** The student will select an appropriate research topic, with approval by department chairman. Research design and/or research will involve library research as well as actual observation and collection of data. P.R. Consent of department chairman. (5—0) 5

## Air Conditioning And Refrigeration

The growing use of air conditioning (heating and cooling) and refrigeration equipment systems throughout the nation provides many job opportunities for the skilled mechanics who install and repair such equipment in office buildings, factories, homes, food stores, restaurants, theatres, hospitals, churches and other establishments.

A great number of these skilled people are employed by business concerns which specialize in the repair and maintenance of commercial, industrial and home air-conditioning (heating and cooling) and refrigeration equipment. Another important element involves conversion and modernization of obsolete installations.

Employers prefer to hire men who have a background of knowledge and skill in the field and give them the opportunity to gain additional experience on the job while earning good wages.

Thousands of men trained to install, maintain and repair air-conditioning and refrigeration equipment are needed to meet the demand in this field.

### Description Of Curriculum

The air-conditioning and refrigeration curriculum at Central Piedmont Community College is designed to prepare a person for employment in this field. The students not only learn theory but also spend a large amount of time in a modern laboratory with up-to-date equipment. Necessary courses in mathematics, science and other related areas are included in the program. A graduate from this curriculum is awarded a diploma by the College and a diploma from the Air Conditioning and Refrigeration Institute.

Students satisfactorily completing the four quarter diploma program are eligible to enroll in the Air Conditioning and Refrigeration Technology program with advanced standing.





### Suggested Sequence Of Required Courses For Air Conditioning And Refrigeration

First Quarter	Course Title	Hours per Week		Quarter Hours Credit
		Class	Lab	
AHR 5311	Refrigeration Theory	3	0	3
AHR 5412	Refrigeration Shop Practices	2	6	4
AHR 5313	Refrigeration Service Principles	2	3	3
AHR 5314	Basic Automatic Controls	2	3	3
PHY 5304	Shop Science I	2	2	3
MAT 5304	Shop Mathematics I	3	0	3
		<hr/>	<hr/>	<hr/>
		14	14	19
<b>Second Quarter</b>				
AHR 5321	Commercial Refrigeration Installation	2	3	3
AHR 5422	Commercial Refrigeration Service	2	6	4
AHR 5323	Oil Burners	2	3	3
DFT 5300	Blueprint Reading	3	0	3
PHY 5305	Shop Science II	2	2	3
		<hr/>	<hr/>	<hr/>
		11	14	16
<b>Third Quarter</b>				
AHR 5331	Air Conditioning—Residential	2	3	3
AHR 5432	Air Conditioning—Commercial	2	6	4
AHR 5333	Liquid Heat—One Pipe Systems	2	3	3
AHR 5334	Liquid Heat—Two Pipe Systems	2	3	3
MAT 5305	Shop Mathematics II	3	0	3
ENG 5500	Communication Skills	5	0	5
		<hr/>	<hr/>	<hr/>
		16	15	21
<b>Fourth Quarter</b>				
AHR 5441	Gas Heat	2	6	4
AHR 5342	Electric Heat	2	3	3
AHR 5343	All Weather Systems—Conventional	2	3	3
AHR 5344	All Weather Systems—Heat Pumps	2	3	3
WLD 5110	Basic Oxyacetylene Welding	0	3	1
PSY 5200	Human Relations	2	0	2
		<hr/>	<hr/>	<hr/>
		10	18	16

### Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically, by the abbreviation or prefix letters.

## Air Conditioning And Refrigeration

**AHR 5311 Refrigeration Theory:** This course consists of lectures, discussions, and demonstrations in the general area of refrigeration theory and practice. The elements of thermodynamics will be discussed and principles applied in laboratory practice. The refrigerant cycle will be fully explained and demonstrated using the very latest learning aids. C.R. PHY 5304, MAT 5304. (3—0) 3

**AHR 5313 Refrigeration Service Principles:** Experience is provided the student in actual refrigeration service practice. Controls, system maintenance, and sub assembly replacement will be stressed. Typical service problems will be worked out by each student. P.R. AHR 5311, AHR 5412 or one year field experience in lieu of AHR 5412. (2—3) 3

**AHR 5314 Basic Automatic Controls:** This course is designed to assist the student in understanding heating and cooling control systems. The fundamentals of controls, definitions, fundamentals of measurement, electric controls, and controls for commercial refrigeration and residential air conditioning are covered in theory and in actual practice in the lab section. (2—3) 3

**AHR 5321 Commercial Refrigeration Installation:** This course consists of study demonstrations and practice in the installation of commercial refrigeration systems. Various systems are installed and typical piping arrangements are used. Low and medium temperature units with electric, hot gas, reverse cycle, and water defrost are included with air and water cooled units. C.R. DFT 5300; P.R. AHR 5313 or one year in field, AHR 5311. (2—3) 3

**AHR 5323 Oil Burners:** This course involves study and practice in the installation and servicing of equipment using high pressure, and vaporizing burners. The installation and servicing of various oil burning equipment controls are studied. Actual practice is given in "trouble shooting" problems of oil burners, fans, pumps and their controls under typical working conditions. Service department stock, tools and procedures are integral parts of the instruction. Special emphasis is placed on combustion efficiency testing and adjustments. (2—3) 3

**AHR 5331 Air Conditioning—Residential:** This course includes a review of the refrigerant cycle and system components. Terminology used in the trade, principles of refrigeration, identification of basic system components, introduction to and practice with tools and shop equipment found in the field today. Standard procedures and safety measures are included. Various air and water cooled, self-contained and remote, residential systems will be studied, installed, and serviced. Air moving equipment will be studied. C.R. MAT 5305; P.R. AHR 5311, AHR 5314, AHR 5313 or one year field experience in lieu of AHR 5313. (2—3) 3

**AHR 5333 Liquid Heat—One Pipe Systems:** An introduction to hydronic heating. The student studies and receives practice in the installation and service of one pipe hydronic systems in residences. P.R. MAT 5304 (2—3) 3

**AHR 5334 Liquid Heat—Two Pipe Systems:** This course treats principles of installation of two pipe hot water systems in residences. Great emphasis is placed on piping and control systems. P.R. AHR 5333. (2—3) 3

**AHR 5342 Electric Heat:** This is a comprehensive study of electric heating for residential and small commercial installations, including various types of systems such as ceiling cable, panels, baseboard, valance, electric furnaces and boilers. Operating and safety controls are covered in depth, and considerable time is given to proper care and use of test instruments and safety requirements. P.R. MAT 5304 (2—3) 3

**AHR 5343 All Weather Systems—Conventional:** The student receives practical information and experience in the combination of heating and cooling equipment into integrated systems. These include gas/electric units, and the combination oil/electric units. The special controls unique to these particular units are studied in detail. C.R. WLD 5110; P.R. AHR 5311, AHR 5314, AHR 5432. (2—3) 3

**AHR 5344 All Weather Systems—Heat Pumps:** The refrigerant cycle and the "reverse cycle" principle including the reversing valve receives a great deal of time in this course. Special components and accessories used with the heat pumps are covered. A considerable amount of instruction is devoted to the electric controls found on heat pump systems, and to the various service problems involved. C.R. PSY 5200; P.R. AHR 5343. (2—3) 3

**AHR 5412 Refrigeration Shop Practices:** Practice will be given in the use of tools in basic refrigeration jobs such as tube bending, flaring, swaging, soldering, refrigerant handling and use of the gauge manifold. Student will also become acquainted with the standard shop tools and equipment generally found in industry. C.R. AHR 5311. (2—6) 4

**AHR 5422 Commercial Refrigeration Service:** Various systems are studied,

and typical service problems are solved by the individual student. Refrigerant leaks are repaired, components replaced, systems evacuated and dehydrated, oil and refrigerant charge installed, systems tested and adjusted. C.R. PHY 5305; P.R. AHR 5321. (2-6) 4

**AHR 5432 Air Conditioning—Commercial:** Standard types of compressors, condensers, coils, valves, and controls are studied. Various systems including self contained and remote, water and air cooled, water towers and chilled water systems are studied and serviced. Special consideration is given to proper piping procedures and accessories. Problems involving air distribution are considered. C.R. ENG 5400; P.R. AHR 5331. (2-6) 4

**AHR 5441 Gas Heat:** The student studies and receives practice in the actual installation and servicing of various types of gas burners, gas furnaces, piping, venting and controls. Special emphasis is placed on combustion efficiency testing and adjusting. Considerable consideration is given to safety requirements. P.R. MAT 5304 (2-6) 4

**DFT 5300 Blueprint Reading:** The interpretation and reading of blueprints. Development of the ability to read and interpret blueprints, charts, instruction and service manuals and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures and notes. (3-0) 3

**ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems. (5-0) 5

**MAT 5304 Shop Mathematics I:** A review of all mathematical fundamental processes dealing with whole, mixed, decimal and fractional numbers. The necessary shop concepts for decimals, ratios, percentage, and all mathematical fundamental processes and procedures are emphasized and demonstrated. (3-0) 3

**MAT 5305 Shop Mathematics II:** The emphasis is placed on practical shop mathematical problems dealing with formulas, square root equations, ratios, applied geometry, and geometric constructions. Concepts for linear and volume measure are taught. Major emphasis is placed on the applied geometric measurements with the correct application of the required formula for the lay-out or problem involved. P.R. MAT 5304. (3-0) 3

**PHY 5304 Shop Science I:** An introductory course in physics and its application covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism, and electro-magnetism. The production, transmission, distribution, measurement and specific application of electrical energy also constitute major areas of study. (2-2) 3

**PHY 5305 Shop Science II:** Principles of force, motion, work, energy, power and mechanisms mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 5304. (2-2) 3

**PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good government. (2-0) 2

**WLD 5110 Basic Oxyacetylene Welding:** Welding demonstrations by the instructor and practice by students in the oxyacetylene welding shop. Safe and correct methods of assembling and operating the welding equipment are emphasized. Practice is given in surface welding, bronze welding, silver-soldering and flame cutting methods applicable to mechanical repair work. (0-3) 1

## Electives

**AHR 5394 Mechanical Codes I:** Air Conditioning Code—An intensive study of the national code book covering residential and commercial installations. Course is intended to assist the student in preparing for the municipal and/or state examination for licensure in this field. Open only to the graduates or those with experience in the field. (3-0) 3

**AHR 5395 Mechanical Codes II:** Warm Air Heating Code. (3-0) 3

**AHR 5396 Mechanical Codes III:** Refrigeration Code. (3-0) 3

**AHR 5397 Mechanical Codes IV:** Hot Water and Steam Codes. (3-0) 3

**AHR 5594 Duct Design I—Rectangular Duct:** The student is introduced to the sheet metal shop and its rules and regulations concerning safety and workmanship. He learns to recognize and use safely the various hand tools and machines of the trade. Course is designed to teach the students how to layout, fabricate, and install rectangular duct. P.R. MAT 5205, DFT 5300. (3-6) 5

**AHR 5495 Duct Design II—Round Duct:** This course is to follow Duct Design I and will be primarily concerned with layout, fabrication, and installation of round duct. It will also be concerned with the layout of rectangular to round transitions which will enable the student to fabricate a duct system using both round and rectangular duct. P.R. AHR 5594 (3-3) 4

**AHR 5398 Duct Design III—Patterns and Specialty Design:** This incorporates the principles of Duct Design I and II into enabling the student to fabricate patterns and specialty items. P.R. AHR 5594, AHR 5395. (2-3) 3

**AHR 5390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department, and vice president is required. (3-0) 3

## Air Conditioning And Refrigeration Technology

In recent years the use of air-conditioning and refrigeration equipment has increased tremendously! The accelerated use of sophisticated air conditioning, electric heat, and even more exotic combination heating and air conditioning systems are bringing swift and complex changes throughout the industry. Rapid strides are being made in refrigeration equipment; and machinery that is more intricate and highly efficient is replacing obsolete installations.

Air conditioning has become a major national industry and offers many opportunities for employment. The variety and complexity of today's air conditioning and refrigeration equipment requires continued upgrading of existing personnel and increased sophistication of training programs and their graduates.

The demand for research personnel, refrigeration engineers, refrigeration technicians, and field engineers who can plan, install, or manage industrial and commercial equipment will continue. There are also excellent opportunities for men who desire to establish their own business in this field. The air conditioning and refrigeration technician is in a specialized field, much in demand and offering high pay. He is the most important link in the atmosphere engineering chain.

### Description Of Curriculum

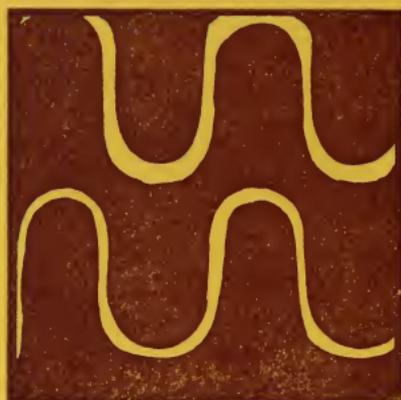
The Air Conditioning and Refrigeration Technology curriculum at Central Piedmont Community College includes both classroom and laboratory experiences with practical applications to the industry.

The degree Associate in Applied Science in Air Conditioning and Refrigeration Technology is awarded upon completion of the program.

Entry into the Air Conditioning and Refrigeration Technology curriculum shall be either upon satisfactorily passing a prescribed evaluation; or any person who is the holder of either a heating Group I, Group II, or Group III qualifying license as issued in accordance with North Carolina General Statutes, Chapter 87, Article II; or a Refrigeration Contractor's License issued in accordance with the provisions of Chapter 87, Article V of the General Statutes of North Carolina; or graduate engineers with appropriate backgrounds shall be admitted without further examination, upon satisfactory evidence of such qualifications.

Any graduate of the present Air Conditioning and Refrigeration curriculum of Central Piedmont Community College will be admitted, without further testing or examination, with advanced standing.





## Suggested Sequence Of Required Courses For Air Conditioning And Refrigeration Technology

Course Title	Hours per Week		Quarter
	Class	Lab	Hours Credit
<b>First Quarter</b>			
AHR 5311 Refrigeration Theory	3	0	3
AHR 5412 Refrigeration Shop Practices	2	6	4
AHR 5313 Refrigeration Service Principles	2	3	3
AHR 5314 Basic Automatic Controls	2	3	3
PHY 5304 Shop Science I	2	2	3
MAT 5304 Shop Mathematics I	3	0	3
	14	14	19
<b>Second Quarter</b>			
AHR 5321 Commercial Refrigeration Installation	2	3	3
AHR 5422 Commercial Refrigeration Service	2	6	4
AHR 5323 Oil Burners	2	3	3
DFT 5300 Blueprint Reading	3	0	3
PHY 5305 Shop Science II	2	2	3
	11	14	16
<b>Third Quarter</b>			
AHR 5331 Air Conditioning—Residential	2	3	3
AHR 5432 Air Conditioning—Commercial	2	6	4
AHR 5333 Liquid Heat—One Pipe Systems	2	3	3
AHR 5334 Liquid Heat—Two Pipe Systems	2	3	3
MAT 5305 Shop Mathematics II	3	0	3
ENG 5500 Communication Skills	5	0	5
	16	15	21
<b>Fourth Quarter</b>			
AHR 5441 Gas Heat	2	6	4
AHR 5342 Electric Heat	2	3	3
AHR 5343 All Weather Systems—Conventional	2	3	3
AHR 5344 All Weather Systems—Heat Pumps	2	3	3
WLD 5110 Basic Oxyacetylene Welding	0	3	1
PSY 5200 Human Relations	2	0	2
	10	18	16
<b>Fifth Quarter</b>			
AHR 4451 Commercial Refrigeration Systems Design	4	0	4
AHR 4452 Residential Air Conditioning Systems Design	3	2	4
AHR 4453 Commercial Air Conditioning Systems Design	3	2	4
DFT 4254 Environmental Systems Drawing I	1	2	2
Elective—AHR	3	0	3
	14	6	17
<b>Sixth Quarter</b>			
AHR 4361 Residential Air Distribution and Balance	2	2	3
AHR 4462 Commercial Air Distribution and Balance	3	2	4
AHR 4563 Controls Systems I	3	4	5
Elective—AHR	3	0	3
	11	8	15

Seventh Quarter	Course Title	Hours per Week		Quarter
		Class	Lab.	Hours Credit
AHR 4571	Installation and Service Problems	2	6	5
AHR 4372	Hydronic Distribution Systems Design	3	0	3
AHR 4473	Hydronic Systems Balance	2	4	4
	Elective—AHR	3	0	3
		<hr/> 10	<hr/> 10	<hr/> 15

### Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Air Conditioning And Refrigeration Technology

**AHR 4361 Residential Air Distribution and Balance:** This is a comprehensive study of air and its behavior in a duct or residential air distribution system. This course covers the four basic types of residential air duct designs, air volume, air velocity, blower capacity and friction loss. Properly sizing and balancing of a complete air distribution system for a residence will be presented. (2—2) 3

**AHR 4372 Hydronic Distribution Systems Design:** This is a comprehensive study of the science of heating and/or cooling through the use of circulating chilled and/or hot water. The course covers maximum and recommended temperature and pressure limits, selection of heat distributing units, circulating pumps, compression tanks, zone valves, zone controls, relief valves, flow control, pressure reducing and balancing valves, domestic water heating and system pipe sizing. Cooling tower, pumps and piping selection and sizing is also a part of this course. (3—0) 3

**AHR 4451 Commercial Refrigeration Systems Design:** Various types of installations are studied with emphasis on the product to be cooled, the desired temperature to be maintained, and humidity conditions. Problems involving system balance and component capacity, use of heat load charts, pipe sizing tables, manufacturers' data and specification sheets will be presented along with procedures of load calculating used in commercial refrigeration. (4—0) 4

**AHR 4452 Residential Air Conditioning Systems Design:** Heating and cooling needs of various residential structures are studied; heat loss and heat gain calculations are made by the student to determine type and size of system required and selection of equipment to meet these needs are all a part of this course. A portion of the load calculations and equipment selections will be done in our electronic computer data processing center through the use of data processing equipment. (3—2) 4

**AHR 4453 Commercial Air Conditioning Systems Design:** Special attention is given to the heating and cooling requirements for various commercial structures and the selection of equipment to meet these needs, including heat gain and heat loss calculations. Psychrometric charts, tables, and graphs are used, specific heat and air flow calculations, the state of mixture of two air streams, humidification and dehumidification are included. (3—2) 4

**AHR 4462 Commercial Air Distribution and Balance:** This course will include the study of air and its behavior in a commercial air conditioning system. Individual room air volumes will be calculated and outlet actual testing, adjusting and balancing of an air distribution system. Proper adjustments will be made for correct air distribution throughout an entire system, and air motion within the conditioned area will be studied. (3—2) 4

**AHR 4473 Hydronic Systems Balance:** Actual testing, adjusting and balancing of boilers, pumps, and chilled water units and accessories will be completed. Many instruments will be used in testing, adjusting and balancing of hydronic systems. Pump curves will be studied with various instrumentation and the use of technical data forms will be utilized. (2-4) 4

**AHR 4563 Controls Systems I:** Controls are related to ventilation, refrigeration and air conditioning systems; practice and layouts including the symbols and schematic diagrams; laboratory work in installation of controlled systems, test instruments and their use including actual system adjustment for proper operation are all a part of this course. Electric and electronic controls will be presented. (3-4) 5

**AHR 4571 Installation and Service Problems:** Various types of installations are studied. Instruments, capacity calculations, air mix conditions, component location, refrigerant and insulation requirements, piping techniques and system accessories are all a part of this course. Actual refrigeration, heating and cooling problems on working equipment in the laboratory will be solved by the student. (2-6) 5

**AHR 5311 Refrigeration Theory:** This course consists of lectures, discussions, and demonstrations in the general area of refrigeration theory and practice. The elements of thermodynamics will be discussed and principles applied in laboratory practice. The refrigerant cycle will be fully explained and demonstrated using the very latest learning aids. CR. PHY 5304, MAT 5304. (3-0) 3

**AHR 5313 Refrigeration Service Principles:** Experience is provided the student in actual refrigeration service practice. Controls, system maintenance, and sub assembly replacement will be stressed. Typical service problems will be worked out by each student. P.R. AHR 5311, AHR 5412 or one year field experience in lieu of AHR 5412. (2-3) 3

**AHR 5314 Basic Automatic Controls:** The course is designed to assist the student in understanding heating and cooling control systems. The fundamentals of controls, definitions, fundamentals of measurement, electric controls, and controls for commercial refrigeration and residential air conditioning are covered in theory and in actual practice in the lab section. (2-3) 3

**AHR 5321 Commercial Refrigeration Installation:** This course consists of study demonstrations and practice in the installation of commercial refrigeration systems. Various systems are installed and typical piping arrangements are used. Low and medium temperature units with electric, hot gas, reverse cycle, and water defrost are included with air and water cooled units. C.R. DFT 5300; P.R. AHR 5313 or one year in field, AHR 5311. (2-3) 3



**AHR 5323 Oil Burners:** This course involves study and practice in the installation and servicing of equipment using high pressure, and vaporizing burners. The installation and servicing of various oil burning equipment controls are studied. Actual practice is given in "trouble shooting" problems of oil burners, fans, pumps and their controls under typical working conditions. Service department stock, tools and procedures are integral parts of the instruction. Special emphasis is placed on combustion efficiency testing and adjustments. (2-3) 3

**AHR 5331 Air Conditioning—Residential:** This course includes a review of the refrigerant cycle and system components. Terminology used in the trade, principles of refrigeration, identification of basic system components, introduction to and practice with tools and shop equipment found in the field today. Standard procedures and safety measures are included. Various air and water cooled, self-contained and remote, residential systems will be studied, installed, and serviced. Air moving equipment will be studied. C.R. MAT 5305; P.R. AHR 5311, AHR 5314, AHR 5313 or one year field experience in lieu of AHR 5313. (2-3) 3

**AHR 5333 Liquid Heat—One Pipe Systems:** An introduction to hydronic heating. The student studies and receives practice in the installation and service of one pipe hydronic systems in residences. P.R. MAT 5304. (2-3) 3

**AHR 5334 Liquid Heat—Two Pipe Systems:** This course treats principles of installation of two pipe hot water systems in residences. Great emphasis is placed on piping and control systems. P.R. AHR 5333. (2-3) 3

**AHR 5342 Electric Heat:** This is a comprehensive study of electric heating for residential and small commercial installations, including various types of systems such as ceiling cable, panels, baseboard, valance, electric furnaces and boilers. Operating and safety controls are covered in depth, and considerable time is given to proper care and use of test instruments and safety requirements. P.R. MAT 5304. (2-3) 3

**AHR 5343 All Weather Systems—Conventional:** The student receives practical information and experience in the combination of heating and cooling equipment into integrated systems. These include gas/electric units, and the combination oil/electric units. The special controls unique to these particular units are studied in detail. C.R. WLD 5110; P.R. AHR 5311, AHR 5314, AHR 5432. (2-3) 3

**AHR 5344 All Weather Systems—Heat Pumps:** The refrigerant cycle and the "reverse cycle" principle including the reversing valve receives a great deal of time in this course. Special components and accessories used with the



heat pumps are covered. A considerable amount of instruction is devoted to the electric controls found on heat pump systems, and to the various service problems involved. C.R. PSY 5200; P.R. AHR 5343. (2—3) 3

**AHR 5412 Refrigeration Shop Practices:** Practice will be given in the use of tools in basic refrigeration jobs such as tube bending, flaring, swaging, soldering, refrigerant handling and use of the gauge manifold. Student will also become acquainted with the standard shop tools and equipment generally found in industry. C.R. AHR 5311. (2—6) 4

**AHR 5422 Commercial Refrigeration Service:** Various systems are studied, and typical service problems are solved by the individual student. Refrigerant leaks are repaired, components replaced, systems evacuated and dehydrated, oil and refrigerant charge installed, systems tested and adjusted. C.R. PHY 5305; P.R. AHR 5321. (2—6) 4

**AHR 5432 Air Conditioning—Commercial:** Standard types of compressors, condensers, coils, valves, and controls are studied. Various systems including self contained and remote, water and air cooled, water towers and chilled water systems are studied and serviced. Special consideration is given to proper piping procedures and accessories. Problems involving air distribution are considered. C.R. ENG 5400; P.R. AHR 5331. (2—6) 4

**AHR 5441 Gas Heat:** The student studies and receives practice in the actual installation and servicing of various types of gas burners, gas furnaces, piping, venting and controls. Special emphasis is placed on combustion efficiency testing and adjusting. Considerable consideration is given to safety requirements. P.R. MAT 5304. (2—6) 4

**DFT 4254 Environmental Systems Drawing I:** Instruction in the proper use and care of drafting tools and equipment and orientation in the sequence of producing various drawings, including lettering. Both orthographic and perspective projection will be covered. The greater emphasis will be on building plans, piping elevations, sectional views and dimensioning. Isometric drawing applied to piping and equipment will be practiced. Both freehand sketching and scale drawing will be included. Practical geometry will be included as it applies to this course (1—2) 2

**DFT 5300 Blueprint Reading:** The interpretation and reading of blueprints. Development of the ability to read and interpret blueprints, charts, instruction and service manuals and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures and notes. (3—0) 3

**ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems. (5—0) 5



**MAT 5304 Shop Mathematics I:** A review of all mathematical fundamental processes dealing with whole, mixed, decimal and fractional numbers. The necessary shop concepts for decimals, ratios, percentage, and all mathematical fundamental processes and procedures are emphasized and demonstrated. (3—0) 3

**MAT 5305 Shop Mathematics II:** The emphasis is placed on practical shop mathematical problems dealing with formulas, square root equations, ratios, applied geometry, and geometric constructions. Concepts for linear and volume measure are taught. Major emphasis is placed on the applied geometric measurements with the correct application of the required formula for the lay-out or problem involved. P.R. MAT 5304. (3—0) 3

**PHY 5304 Shop Science I:** An introductory course in physics and its application covering systems and measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electromagnetism. The production, transmission, distribution, measurement and specific application of electrical energy also constitute major areas of study. (2—2) 3

**PHY 5305 Shop Science II:** Principles of force, motion, work, energy, power and mechanisms' mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 5304. (2—2) 3

**PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management. (2—0) 2

**WLD 5110 Basic Oxyacetylene Welding:** Welding demonstrations by the instructor and practice by students in the oxyacetylene welding shop. Safe and correct methods of assembling and operating the welding equipment are emphasized. Practice is given in surface welding, bronze welding, silver-soldering and flame cutting methods applicable to mechanical repair work. (0—3) 1



## Electives

**AHR 4381 Gas Piping Design and Installation:** A study of the American Gas Association (A.G.A.) recommended procedures for gas piping and appliance installation. This course is intended to assist the student in preparing for municipal examination for licensure in the field of Journeyman Gas Fitter, open only to graduates or those with experience in the field. (3—0) 3

**AHR 4382 Air Conditioning Estimates and Contracts:** This course covers costing analysis and profit percentage. Markups are stressed. Time and material take offs from plans and specifications are made by the student. Operational cost estimates are also a part of this course. Various business forms and records are introduced. (3—0) 3

**AHR 4383 Transport Refrigeration:** This course provides an overview of the potential in transportation type of refrigeration and deals with the various makes and types of systems currently in use. A review of the refrigeration cycle, the special application of equipment and controls required to meet the unique demands of this important phase of refrigeration. (3—0) 3

**AHR 4384 Controls System II:** An indepth study of the theory of operation and practical application of electronic controls as used in the environmental control industry. (3—4) 5

**AHR 4385 Control Systems III:** An indepth study of the theory of operation and practical application of pneumatic controls as used in the environmental control industry. (3—4) 5

**AHR 4386 Controls IV:** An indepth study of the theory of operation and practical application of fluidic controls as used in the environmental control industry. (3—4) 5

**AHR 5394 Mechanical Codes I: Air Conditioning Code—**An intensive study of the national code book covering residential and commercial installations. Course is intended to assist the student in preparing for the municipal and/or state examination for licensure in this field. Open only to graduates or those with experience in the field. (3—0) 3

**AHR 5395 Mechanical Codes II: Warm Air Heating Code.** (3—0) 3

**AHR 5396 Mechanical Codes III: Refrigeration Code.** (3—0) 3

**AHR 5397 Mechanical Codes IV: Hot Water and Steam Code.** (3—0) 3

**AHR 5594 Duct Design I—Rectangular Duct:** The student is introduced to the sheet metal shop and its rules and regulations concerning safety and workmanship. He learns to recognize and use safely the various hand tools and machines of the trade. Course is designed to teach the students how to layout, fabricate, and install rectangular duct. P.R. MAT 5305, DFT 5300. (3—6) 5

**AHR 5495 Duct Design II—Round Duct:** This course is to follow Duct Design I and will be primarily concerned with layout, fabrication, and installation of round duct. It will also be concerned with the layout of rectangular to round transitions which will enable the student to fabricate a duct system using both round and rectangular duct. P.R. AHR 5594. (3—3) 4

**AHR 5398 Duct Design III—Patterns and Specialty Design:** This incorporates the principles of Duct Design I and II into enabling the students to fabricate patterns and specialty items. P.R. AHR 5594, AHR 5495. (2—3) 3

**AHR 4390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department, and vice president is required. (3—0) 3

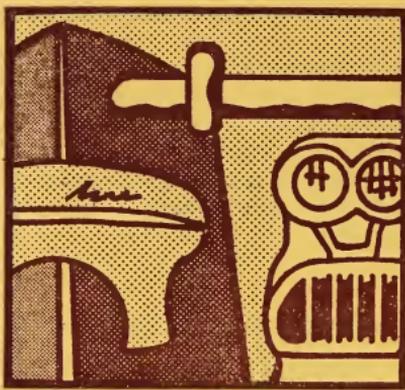
## Automotive Body Repair

The field of automotive body repair and painting requires a large number of well-trained people to meet the growing demand for the many skills needed in this area of employment. People with a background of knowledge and skill in this field have excellent opportunities for jobs with good salaries. Many of these craftsmen, after gaining additional experience, go on to open their own businesses or become body shop foremen, supervisors or managers.

### Description Of Curriculum

The curriculum at Central Piedmont Community College devotes much of the student's time in the shop to learning of the necessary skills and practicing of these skills on car bodies and components. Every attempt is made to make these practical experiences as similar to the actual on-the-job work as possible. The large shop and excellent equipment are ideal for preparation for entry into an occupation offering many job opportunities. A graduate from this curriculum will receive a diploma from the College.





### Suggested Sequence Of Required Courses For Automotive Body Repair

		Course Title	Hours per Class	Week Lab.	Quarter Hours Credit
<b>First Quarter</b>					
AUT	5212	Frame Alignment	1	3	2
AUT	5213	Body Alignment	1	3	2
AUT	5214	Door and Fender Alignment	1	3	2
AUT	5201	Trim and Glass	1	3	2
AUT	5100	Auto Body Seminar	1	0	1
WLD	5110	Basic Oxyacetylene Welding	0	3	1
ENG	5500	Communication Skills	5	0	5
MAT	5304	Shop Mathematics I	3	0	3
			<hr/>	<hr/>	<hr/>
			13	15	18
<b>Second Quarter</b>					
AUT	5221	Metal Finishing	1	3	2
AUT	5222	Plastic Body Fillers	1	3	2
AUT	5223	Metallic Body Fillers	1	3	2
AUT	5224	Panel Installation	1	3	2
AUT	5200	Cooling Systems	1	3	2
AUT	5101	Auto Body Seminar	1	0	1
WLD	5130	Auto Body Welding	0	3	1
PHY	5304	Shop Science I	2	2	3
PSY	5200	Human Relations	2	0	2
			<hr/>	<hr/>	<hr/>
			10	20	17
<b>Third Quarter</b>					
AUT	5231	Spray Equipment and Techniques	1	3	2
AUT	5232	Painting Preparation	1	3	2
AUT	5233	Painting Acrylic Lacquer	1	3	2
AUT	5234	Painting Acrylic Enamel	1	3	2
AUT	5235	Special Finishes	1	3	2
AUT	5102	Auto Body Seminar	1	0	1
PHY	5305	Shop Science II	2	2	3
BUS	5200	Shop Management	2	0	2
AUT	5114	Auto Air Conditioning	0	3	1
			<hr/>	<hr/>	<hr/>
			10	20	17
<b>Fourth Quarter</b>					
AUT	5244	Body Shop Applications	0	6	2
AUT	5245	Body Shop Applications	0	6	2
AUT	5246	Body Shop Applications	0	6	2
AUT	5247	Body Shop Applications	0	6	2
AUT	5203	Auto Body Seminar	2	0	2
WLD	5120	Basic Arc Welding	0	3	1
			<hr/>	<hr/>	<hr/>
			2	27	11

## Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Automotive Body Repair

- AUT 5100 Auto Body Seminar:** A weekly seminar in which programs on topics of particular interest to auto body repair students will be presented. Guest lecturers, product demonstrations and special changes affecting these trades will be presented. Open to all interested students. (1-0) 1
- AUT 5101 Auto Body Seminar:** A continuation of AUT 5100. (1-0) 1
- AUT 5102 Auto Body Seminar:** A continuation of AUT 5100. (1-0) 1
- AUT 5114 Auto Air Conditioning:** A general introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms; the methods of operation and control; proper handling of refrigerants in charging the system. (0-3) 1
- AUT 5200 Cooling Systems:** The student will learn the function of the cooling system and how it works. He will also learn how to test and repair certain parts of the cooling system such as radiators, heater cores, etc. P.R. WLD 5110. (1-3) 2
- AUT 5201 Trim and Glass:** A study of automobile trim which includes door panels, head lining, upholstery, etc., and the removal and installation of glass. (1-3) 2
- AUT 5203 Auto Body Seminar:** A continuation of AUT 5100. (2-0) 2
- AUT 5212 Frame Alignment:** A study of the automobile frame and its related parts. Through demonstrations and practical projects the students will learn methods of checking and correcting the alignment of the frame. C.R. WLD 5110. (1-3) 2
- AUT 5213 Body Alignment:** A study of the automobile body and its related parts. Through demonstrations and practical projects the student will learn methods of checking and correcting the alignment of the automobile body. C.R. WLD 5110. (1-3) 2
- AUT 5214 Door and Fender Alignment:** Methods of installing and aligning the related parts of the automobile body such as doors, fenders, hoods and deck lids. C.R. WLD 5110. (1-3) 2
- AUT 5221 Metal Finishing:** A study of the methods used to remove dents and straighten body panels without the use of body fillers. (1-3) 2
- AUT 5222 Plastic Body Fillers:** The student will work with different types of plastic body fillers and learn the methods of working with them and their application in body repair. (1-3) 2
- AUT 5223 Metallic Body Fillers:** The student will work with metallic body fillers and learn the methods of working with them and their application in body repairs. (1-3) 2
- AUT 5224 Panel Installation:** The student will be working with the methods and techniques involved in the removal and installation of body panels such as quarter panels, door panels, patch panels, etc. C.R. WLD 5130. (1-3) 2
- AUT 5231 Spray Equipment and Techniques:** A study of proper maintenance and care of spray equipment and basic methods of using the equipment. (1-3) 2
- AUT 5232 Painting Preparation:** The student will learn the necessary procedures used to prepare an automobile surface for painting. (1-3) 2
- AUT 5233 Painting Acrylic Lacquer:** The student will learn the steps necessary in preparation and application of acrylic lacquer and buffing the finished job. C.R. AUT 5231 and AUT 5232. (1-3) 2
- AUT 5234 Painting Acrylic Enamel:** The student will be working with acrylic enamel and will learn the steps necessary in preparation and methods of application. C.R. AUT 5231 and AUT 5232. (1-3) 2

- AUT 5235 Special Finishes:** A study of the use and application of various special finishes such as the sprayed vinyl roof coating used on present automobiles and luggage compartment coatings. (1—3) 2
- AUT 5244 Body Shop Applications:** A laboratory type class in which the students will gain confidence and skill in the use of all the techniques covered in the previous courses. Work is done on actual collision repairs using the same methods and practices as recommended by the automobile manufacturers and the related industry. (0—6) 2
- AUT 5245 Body Shop Applications:** A continuation of AUT 5244. (0—6) 2
- AUT 5246 Body Shop Applications:** A continuation of AUT 5244. (0—6) 2
- AUT 5247 Body Shop Applications:** A continuation of AUT 5244. (0—6) 2
- BUS 5200 Shop Management:** An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer-employee relations. (2—0) 2
- ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems. (5—0) 5
- MAT 5304 Shop Mathematics I:** A review of all mathematical fundamental processes dealing with whole, mixed, decimal and fractional numbers. The necessary shop concepts for decimals, ratios, percentage, and all mathematical fundamental processes and procedures are emphasized and demonstrated. (3—0) 3
- PHY 5304 Shop Science I:** An introductory course in physics and its application covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electro-magnetism. The production, transmission, distribution, measurement and specific application of electrical energy also constitute major areas of study. (2—2) 3
- PHY 5305 Shop Science II:** Principles of force, motion, work, energy, power and mechanisms' mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 5304. (2—2) 3
- PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management. (2—0) 2
- WLD 5110 Basic Oxyacetylene Welding:** Welding demonstrations by the instructor and practice by students in the oxyacetylene welding shop. Safe and correct methods of assembling and operating the welding equipment are emphasized. Practice is given in surface welding, bronze welding, silver soldering and flame cutting methods applicable to mechanical repair work. (0—3) 1
- WLD 5120 Basic Electric Arc Welding:** Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding. Emphasis on electric arc and hard surface methods applicable to mechanical repair work. P.R. WLD 5110. (0—3) 1
- WLD 5130 Auto Body Welding:** Welding practices on material applicable to the installation of body panels and repairs to doors, fenders, hoods and deck lids. The student runs beads, does butt and fillet welds and performs all tests to detect strength and weaknesses of welded joints. Safety procedures are emphasized throughout the course. P.R. WLD 5110. (0—3) 1
- AUT 5390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3—0) 3

## Vehicle Maintenance

Automotive Mechanics Option

Truck Mechanics Option

Construction Equipment Mechanics Option

Modern vehicles are manufactured in a great variety of types and sizes, from the family automobile to large construction equipment. These vehicles are complicated machines requiring highly skilled, well-trained personnel to properly repair and maintain them for operation at peak efficiency. Vehicle mechanics make up the largest service and repair group in the United States. Wages are good and opportunities are excellent for the person who is anxious to learn and willing to work.

### Description Of Curriculum

The curriculum at Central Piedmont Community College is designed to provide the future craftsman with a well-planned program of operational skills and theory necessary to become a vehicle mechanic. Topics emphasized include a working knowledge in the tune-up, overhaul, repair and replacement of parts of gasoline and diesel engines; trouble-shooting and repair of electrical equipment; overhaul and replacement of parts in hydraulic systems and in conventional and automatic transmissions; and preparation in other vital areas. In recognition of the tremendous range of knowledge and skill which would be required to maintain all the types of vehicles, the curriculum is designed to allow the student, after two quarters of basic study, to specialize in either automotive mechanics, truck mechanics or construction equipment mechanics. A graduate will receive a diploma from the College.





**Suggested Sequence For Required Courses For Vehicle Maintenance Foundation Program**

Course Title	Hours per Week		Quarter
	Class	Lab.	Hours Credit
<b>First Quarter</b>			
PME 5800 Internal Combustion Engines	4	12	8
PME 5401 Internal Combustion Engines I (2-6) 4			
PME 5402 Internal Combustion Engines II (2-6) 4			
PME 5100 Mechanical Seminar	1	0	1
MAT 5304 Shop Mathematics I	3	0	3
PHY 5304 Shop Science I	2	2	3
WLD 5110 Basic Oxyacetylene Welding	0	3	1
	<hr/> 10	<hr/> 17	<hr/> 16
<b>Second Quarter</b>			
PME 5814 Electric Systems	4	12	8
PME 5415 Electrical Systems I (2-6) 4			
PME 5416 Electrical Systems II (2-6) 4			
PME 5404 Fuel Systems	2	6	4
PME 5101 Mechanical Seminar	1	0	1
PHY 5305 Shop Science II	2	2	3
	<hr/> 9	<hr/> 20	<hr/> 16



**Auto Mechanics Option**

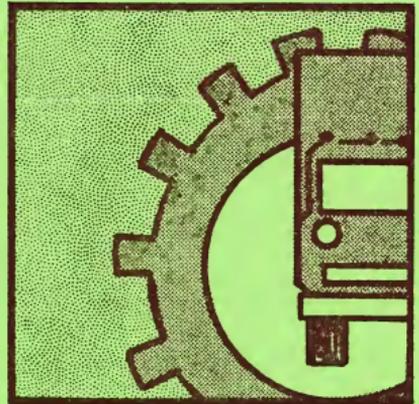
<b>Third Quarter</b>			
AUT 5404 Auto Chassis and Suspension Systems	2	6	4
AUT 5824 Auto Power Train Systems	4	12	8
AUT 5425 Auto Power Train Systems I (2-6) 4			
AUT 5426 Auto Power Train Systems II (2-6) 4			
PME 5102 Mechanical Seminar	1	0	1
ENG 5500 Communication Skills	5	0	5
	<hr/> 12	<hr/> 18	<hr/> 18
<b>Fourth Quarter</b>			
AUT 5114 Automotive Air Conditioning	0	3	1
AUT 5604 Automotive Servicing	0	18	6
AUT 5305 Automotive Servicing I (0-9) 3			
AUT 5306 Automotive Servicing II (0-9) 3			
PME 5103 Mechanical Seminar	1	0	1
PSY 5200 Human Relations	2	0	2
BUS 5200 Shop Management	2	0	2
	<hr/> 5	<hr/> 21	<hr/> 12

## Vehicle Maintenance Foundation Program

	Course Title	Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
PME 5800	Internal Combustion Engines	4	12	8
PME 5401	Internal Combustion Engines I (2-6) 4			
PME 5402	Internal Combustion Engines II (2-6) 4			
PME 5100	Mechanical Seminar	1	0	1
MAT 5304	Shop Mathematics I	3	0	3
PHY 5304	Shop Science I	2	2	3
WLD 5110	Basic Oxyacetylene Welding	0	3	1
		10	17	16

### Second Quarter

PME 5814	Electrical Systems	4	12	8
PME 5415	Electrical Systems I (2-6) 4			
PME 5416	Electrical Systems II (2-6) 4			
PME 5404	Fuel Systems	2	6	4
PME 5101	Mechanical Seminar	1	0	1
PHY 5305	Shop Science II	2	2	3
		9	20	16



### Truck Mechanics Option

#### Third Quarter

TRC 5804	Diesel Engines and Fuel Systems	4	12	8
TRC 5405	Diesel Engines and Fuel Systems I (2-6) 4			
TRC 5406	Diesel Engines and Fuel Systems II (2-6) 4			
WLD 5120	Basic Electric Arc Welding	0	3	1
PSY 5200	Human Relations	2	0	2
BUS 5200	Shop Management	2	0	2
ENG 5500	Communication Skills	5	0	5
PME 5102	Mechanical Seminar	1	0	1
		14	15	19

#### Fourth Quarter

TRC 5400	Truck Power Train Systems	2	6	4
TRC 5403	Truck Chassis and Suspension Systems	2	6	4
TRC 5404	Truck Chassis Electrical Maintenance	2	6	4
PME 5103	Mechanical Seminar	1	0	1
		7	18	13

# Vehicle Maintenance Foundation Program

		Hours per Week		Quarter
Course Title		Class	Lab.	Hours Credit
<b>First Quarter</b>				
PME 5800	Internal Combustion Engines	4	12	8
PME 5401	Internal Combustion Engines I (2-6) 4			
PME 5402	Internal Combustion Engines II (2-6) 4			
PME 5100	Mechanical Seminar	1	0	1
MAT 5304	Shop Mathematics I	3	0	3
PHY 5304	Shop Science I	2	2	3
WLD 5110	Basic Oxyacetylene Welding	0	3	1
		<hr/>	<hr/>	<hr/>
		10	17	16
<b>Second Quarter</b>				
PME 5814	Electrical Systems	4	12	8
PME 5415	Electrical Systems I (2-6) 4			
PME 5416	Electrical Systems II (2-6) 4			
PME 5404	Fuel Systems	2	6	4
PME 5101	Mechanical Seminar	1	0	1
PHY 5305	Shop Science II	2	2	3
		<hr/>	<hr/>	<hr/>
		9	20	16



## Construction Equipment Mechanics Option

### Third Quarter

TRC 5804	Diesel Engines and Fuel Systems	4	12	8
TRC 5405	Diesel Engines and Fuel Systems I (2-6) 4			
TRC 5406	Diesel Engines and Fuel Systems II (2-6) 4			
WLD 5120	Basic Electric Arc Welding	0	3	1
HYD 5304	Hydraulics and Pneumatics	2	2	3
ENG 5500	Communication Skills	5	0	5
PME 5102	Mechanical Seminar	1	0	1
		<hr/>	<hr/>	<hr/>
		12	17	18

### Fourth Quarter

CST 5804	Construction Equipment Power Train Systems	4	12	8
CST 5405	Construction Equipment Power Train Systems I (2-6) 4			
CST 5406	Construction Equipment Power Train Systems II ((2-6) 4			
CST 5404	Construction Equipment Frame and Steering	2	6	4
PSY 5200	Human Relations	2	0	2
PME 5103	Mechanical Seminar	1	0	1
BUS 5200	Shop Management	2	0	2
		<hr/>	<hr/>	<hr/>
		11	18	17

## Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

## Vehicle Maintenance

**AUT 5114 Auto Air Conditioning:** A general introduction to the principles of auto air conditioning; study of the assembly of the components and connections necessary in the mechanisms; the methods of operation and control; proper handling of refrigerants in charging the system. (0—3) 1

**AUT 5305 Automotive Servicing I:** This course emphasizes shop procedures, diagnosis and repairs. It is largely a skill development course which will allow students to do auto repairs in a realistic shop application. P.R. AUT 5404, AUT 5824, PME 5800, PME 5814. (0—9) 3

**AUT 5306 Automotive Servicing II:** This is garage service applications course and consists entirely of skill development in automotive servicing. P.R. AUT 5305. (0—9) 3

**AUT 5404 Auto Chassis and Suspension Systems:** The principles and functions of the components of automotive chassis. Practical job instruction is given in adjusting and repairing suspension, steering and braking systems. Units to be studied include shock absorbers, springs, steering systems, steering linkage, front end and types and servicing of brakes. (2—6) 4

**AUT 5425 Auto Power Train Systems I:** Principles and functions of automotive power train systems; clutches, standard three and four speed transmissions, repair procedures and skill development. (2—6) 4

**AUT 5426 Auto Power Train Systems II:** Principles and functions of power train systems. Includes selected automatic transmission services and repairs. Emphasis on "hands on" type of instruction, also includes drive lines, universal joints and differential study. P.R. AUT 5425. (2—6) 4

**AUT 5604 Automotive Servicing:** Emphasis is on the shop procedures necessary in determining the nature of troubles in the various component systems of the automobile. The course consists of trouble-shooting of automotive systems, providing a full range of testing, adjusting, repairing and replacing experiences. P.R. AUT 5404, AUT 5824, PME 5814, PME 5800. (0—18) 6

**AUT 5824 Auto Power Train Systems:** Principles and functions of automotive power train systems, clutches, transmissions, gears, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing and repair. (4—12) 8

**BUS 5200 Shop Management:** An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer-employee relations. (2—0) 2

**CST 5404 Construction Equipment Frame and Steering:** A study of the frame, steering, and braking systems employed on construction equipment. The operation and repair of these systems found on crawler tractors, loaders, cranes, graders, and other types of power equipment. P.R. HYD 5304. (2—6) 4

**CST 5405 Construction Equipment Power Train Systems I:** A study of the principles of operation of the units that transmit power to the final driving members. (2—6) 4

**CST 5406 Construction Equipment Power Train Systems II:** Maintenance and repair procedures of selected power train systems; "hands on" study of these important construction equipment units. P.R. CST 5405. (2—6) 4

**CST 5804 Construction Equipment Power Train Systems:** A study of the operation, maintenance, and repair of the units that transmit engine power to the driving members. P.R. HYD 5304. (4—12) 8

**ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems.

(5—0) 5

**HYD 5304 Hydraulics and Pneumatics:** A course in the basic theories of hydraulic and pneumatic systems with emphasis on applications related to construction equipment. A simplified non-theoretical approach is used in the discussion of the design, construction, and use of fluid power control elements. It is the aim of this course to provide a practical working knowledge of the hydraulic and pneumatic components and basic circuits used in industrial hydraulics. The lectures will be supplemented by laboratory demonstrations as well as practical experiments carried out by the individual student.

(2—2) 3

**MAT 5304 Shop Mathematics I:** A review of all mathematical fundamental processes dealing with whole, mixed, decimal and fractional numbers. The necessary shop concepts for decimals, ratios, percentage, and all mathematical fundamental processes and procedures are emphasized and demonstrated.

(3—0) 3

**PHY 5304 Shop Science I:** An introductory course in physics and its application covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electromagnetism. The production, transmission, distribution, measurement and specific application of electrical energy also constitute major areas of study.

(2—2) 3

**PHY 5305 Shop Science II:** Principles of force, motion, work, energy, power and mechanisms' mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 5304.

(2—2) 3

**PME 5100, 5101, 5102, 5103 Mechanical Seminar:** A series of weekly seminars in which there will be programs on topics of particular interest to students in the mechanical program. Guest lecturers, product demonstrations, and special reports on technical changes affecting these trades will be presented. Open to all students who are interested. Offered each quarter.

(1—0) 1

**PME 5401 Internal Combustion Engines I:** Fundamental study of automotive engines, construction, and operation study of tools, measuring devices, and overhaul procedure. "Hands on" engine repair skill development is emphasized.

(2—6) 4

**PME 5402 Internal Combustion Engines II:** A continuation of PME 5401. Skill development in engine overhaul procedures, special engine repair tools and equipment study. P.R. PME 5401.

(2—6) 4

**PME 5404 Fuel Systems:** A thorough study of the fuel system of the automobile including fuel pumps, carburetors and fuel injectors. Characteristics of fuels, types of fuel systems, special tools and testing equipment for the fuel systems. P.R. PME 5800.

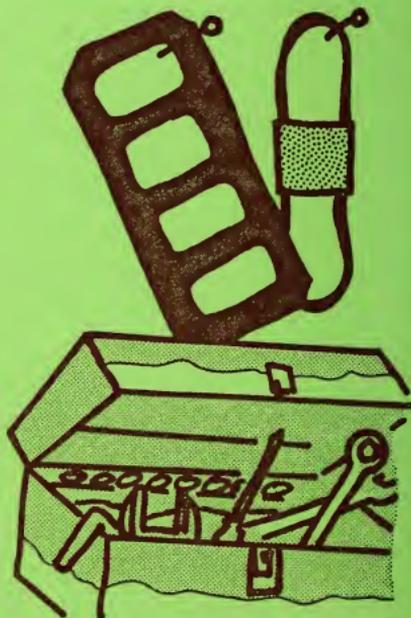
(2—6) 4

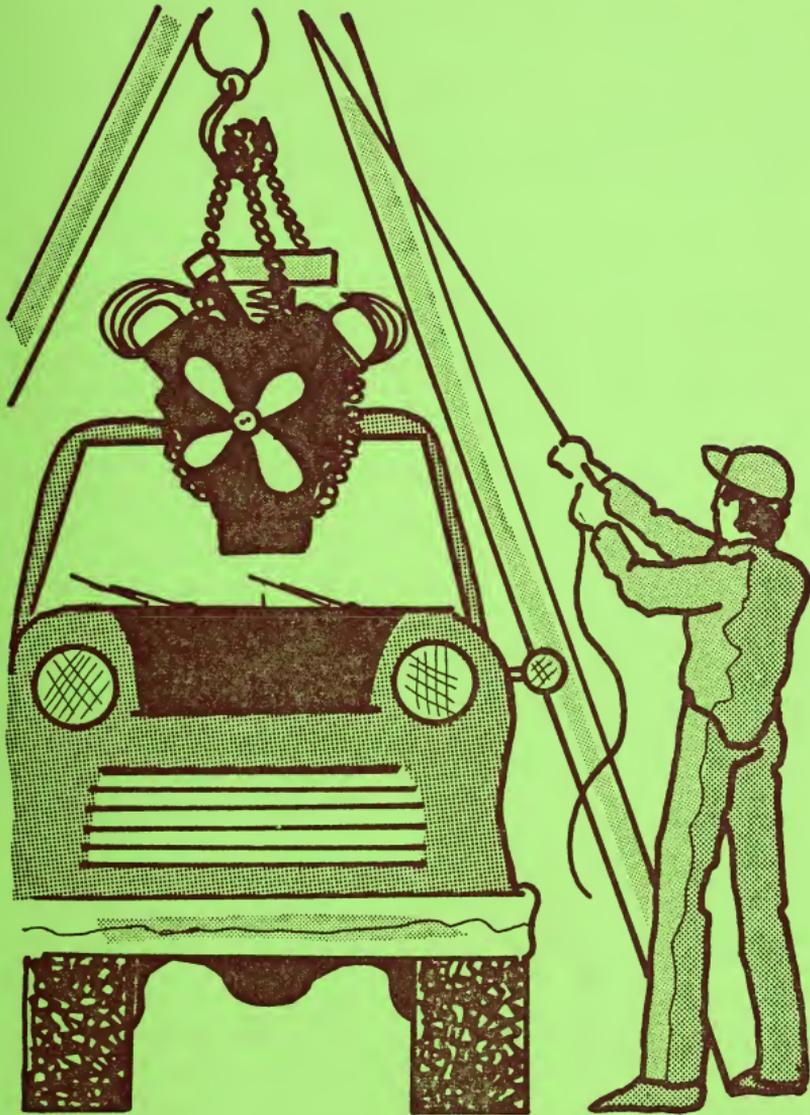
**PME 5415 Electrical Systems I:** A thorough study of the automotive electrical system. Individualized study of selected generators, cranking motors ignition systems, alternators and regulators.

(2—6) 4

**PME 5416 Electrical Systems II:** Skill development in the use of electrical test equipment, tune-up, diagnostic procedures and trouble-shooting. P.R. PME 5415.

(2—6) 4





**PME 5800 Internal Combustion Engines:** The development of a thorough knowledge and ability in using, maintaining and storing the various hand tools and measuring devices needed in automotive repair work. A study of the construction and operation of components of automotive engines. Testing of engine performance; servicing and maintenance of pistons, valves, cams and camshafts; fuel and exhaust systems; cooling systems, proper lubrication and methods of testing, diagnosing and repairing. (4-12) 8

**PME 5814 Electrical Systems:** A thorough study of the electrical system of the automobile, battery cranking mechanism, generator, ignition, accessories and wiring. Emphasis is placed on special tools and testing equipment for the electrical system. (4-12) 8

**PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management. (2-0) 2

**TRC 5400 Truck Power Train Systems:** A study of the operation, maintenance, and service of the units required to transmit the engine power to the driving wheels. (2-6) 4

**TRC 5403 Truck Chassis and Suspension:** A study of the operation, service and repair of suspension, steering, and braking systems found on light, medium, and heavy duty trucks. (2-6) 4

**TRC 5404 Truck Chassis Electrical Maintenance:** A study of the operation, maintenance, and repair of chassis wiring. P.R. PME 5814. (2-6) 4

**TRC 5405 Diesel Engines and Fuel Systems I:** A study of two and four stroke cycle engines and their fuel, air and control systems, and includes principles of operation. P.R. PME 5800, PME 5404. (2-6) 4

**TRC 5406 Diesel Engines and Fuel Systems II:** A continuation of PME 5405. Maintenance, repair and service of two and four stroke cycle diesel engines and related systems. P.R. PME 5405. (2-6) 4

**TRC 5804 Diesel Engines and Fuel Systems:** A study of two and four stroke cycle diesel engines and their fuel, air, and control systems to include principles of operation, maintenance, repair, and service of these units and related systems. P.R. PME 5800, PME 5404. (4-12) 8

**WLD 5110 Basic Oxyacetylene Welding:** Welding demonstrations by the instructor and practice by students in the oxyacetylene welding shop. Safe and correct methods of assembling and operating the welding equipment are emphasized. Practice is given in surface welding, bronze welding, silver soldering and flame cutting methods applicable to mechanical repair work. (0-3) 1

**WLD 5120 Basic Electric Arc Welding:** Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding. Emphasis on electric arc and hard surface methods applicable to mechanical repair work. P.R. WLD 5110. (0-3) 1

**PME 5390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman and vice president is required. (3-0) 3



## Clerk-Typist

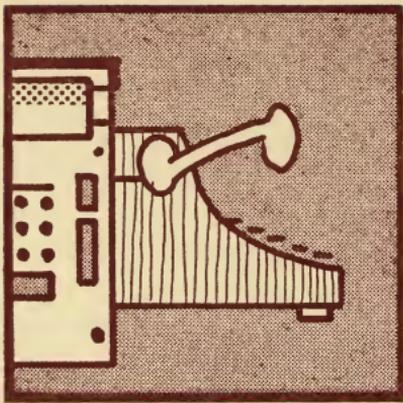
The title "Clerk" covers many specialized fields; such as, Mail Clerk, File Clerk, Payroll Clerk, and numerous other positions. There are about 75,000 Clerk-Typists, 50,000 Clerk-Stenographer and 6,000 Clerk-Dictating Machine Transcriber positions in the Federal Government alone. Throughout business and industry there is a strong demand for skilled clerk-typists.

### Description Of Curriculum

The Clerk-Typist Curriculum at Central Piedmont Community College, Charlotte, N. C., is designed to provide an opportunity for students to become prepared for general office work in **One Year**, enabling them to become proficient in typing, filing, telephoning, duplicating, machine transcribing, handling mail, and using various office machines.

A diploma is awarded upon successful completion of the program.





**Suggested Sequence Of Required Courses  
For Clerk-Typist**

	Course Title	Hours per Week Class	Week Lab.	Quarter Hours Credit
<b>First Quarter</b>				
ENG 5500	Communication Skills	5	0	5
BUS 3404	Elementary Typewriting I	3	2	4
MAT 3304	Business Arithmetic	3	0	3
BUS 5301	General Business	3	0	3
BUS 5310	Vocabulary Building	3	0	3
		<hr/>	<hr/>	<hr/>
		17	2	18
<b>Second Quarter</b>				
BUS 3405	Elementary Typewriting II	3	2	4
ENG 5301	Communication Skills II	3	0	3
PSY 3300	Personality Development	3	0	3
BUS 3600	Secretarial Accounting	5	2	6
		<hr/>	<hr/>	<hr/>
		14	4	16
<b>Third Quarter</b>				
BUS 3406	Intermediate Typewriting I	3	2	4
BUS 4370	Filing	3	0	3
BUS 4300	Office Machines	2	2	3
SPH 1300	Oral Communications	3	0	3
ENG 4304	Business Communications	3	0	3
		<hr/>	<hr/>	<hr/>
		14	4	16
<b>Fourth Quarter</b>				
BUS 4407	Intermediate Typewriting II	3	2	4
BUS 4304	Advanced Office Machines	2	2	3
BUS 3310	Clerical Procedures	3	0	3
	Electives	4-5	0-6	5-6
		<hr/>	<hr/>	<hr/>
		12-13	4-6	15-16

## Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Clerk-Typist

**BUS 3204 Medical Terminology and Vocabulary I:** A study of the structure of medical words and terms. Emphasis is placed on spelling and defining commonly-used prefixes, suffixes, root words and their combining forms.

(1—2) 2

**BUS 3301 Legal Terminology and Vocabulary:** An intensive course of study in legal terminology and vocabulary, including definitions, usage, derivations and spelling.

(3—0) 3

**BUS 3310 Clerical Procedures:** The student performs the duties of a Clerk-Typist employee. The duties include: typing, filing, answering the telephone, handling the mail, and using office forms and supplies. P.R. BUS 3406.

(3—0) 3

**BUS 3404 Elementary Typewriting I:** An introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts. Speed requirement, 30 words per minute for three minutes. (Proficiency test may be taken for this course).

(3—2) 4

**BUS 3405 Elementary Typewriting II:** Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulations, word division problems, manuscripts, and business letters. This course is individualized with self-pacing methods employed. Speed requirement, 40 words per minute for five minutes. P.R. BUS 3404 or equivalent. Placement in this course also by examination.

(3—2) 4

**BUS 3406 Intermediate Typewriting I:** Emphasis is placed on production typing problems and speed building. Attention is given to the development of the student's ability to function as an expert typist, producing mailable copies. The production units involve tabulations, manuscripts, correspondence, and business forms. Individualized and self-instructional methods are employed. Speed requirement, 50 words per minute for five minutes. P.R. BUS 3405 or equivalent.

(3—2) 4

**BUS 3600 Secretarial Accounting:** The principles, techniques and tools of accounting are studied. Emphasis is placed upon understanding of the mechanics of accounting—collecting, summarizing, analyzing and reporting information about services and mercantile enterprises. Opportunity is given for practical application of the principles learned.

(5—2) 6

**BUS 4300 Office Machines:** A general survey of business and office machines. Students will receive training in techniques, processes, operation and application of ten-key adding machines, full-keyboard adding machines and calculators. P.R. MAT 3304.

(2—2) 3

**BUS 4304 Advanced Office Machines:** Instruction is given to students in the operation of duplicating equipment and dictating and transcribing machines. P.R. BUS 3406.

(2—2) 3

**BUS 4370 Filing:** The fundamentals of indexing and filing. Theory and practice are combined by the use of miniature letters, filing boxes and guides. Topics studied include alphabetic name, geographic, subject and numerical filing.

(3—0) 3

**BUS 4407 Intermediate Typewriting II:** This course is a continuation of BUS 3406 and is designed to increase the student's speed and accuracy on straight copy and production typing. The emphasis of the course is to review the fundamental principles of typewriting as they apply to production work. P.R. BUS 3406 or equivalent.

(3—2) 4

**BUS 5301 General Business:** This course is designed to introduce the student to the different types of business ownership, opportunities available and the organization of business in America. (3—0) 3

**BUS 5310 Vocabulary Building:** Emphasis is placed on proficiency in spelling, word usage, business terminology, and intelligent use of the dictionary. (3—0) 3

**BUS 5394 Individual Study—Clerk-Typist:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3—0) 3

**EDP 3300 Introduction to Computer Concepts:** An introductory course in computers for the student who plans to pursue data processing as a career and for the student who desires a general non-technical knowledge of terminology and concepts. No previous knowledge or experience in data processing is required. P.R. Full status in a curriculum program or consent of the Department Head. (3—0) 3

**ENG 4304 Business Communication:** This course develops skills in techniques used in writing business communications. Emphasis is placed on writing effective letters and reports. Action-getting sales letters and letters involving credit, collections, adjustments, complaints, orders, acknowledgements and remittances are covered. P.R. BUS 3404 or equivalent. (3—0) 3

**ENG 5301 Communication Skills II:** Emphasis on interpersonal oral communications and written communications in the student's major. Includes charts, records, letters and technical reports. P.R. ENG 5500. (3—0) 3

**ENG 5500 Communication Skills:** This course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems. (5—0) 5

**MAT 3304 Business Arithmetic:** A study of fundamental processes; addition, subtraction, multiplication and division of whole numbers and common and decimal fractions. The manipulation and application of per cent, essentials of algebraic operations and per cents as applied to the income statement are also studied. P.R. Satisfactory score on entrance math test. (3—0) 3

**PSY 3300 Personality Development:** This course is designed to help the student recognize the importance of the physical, intellectual, social and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement. (3—0) 3

**SPH 1300 Oral Communications:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3—0) 3



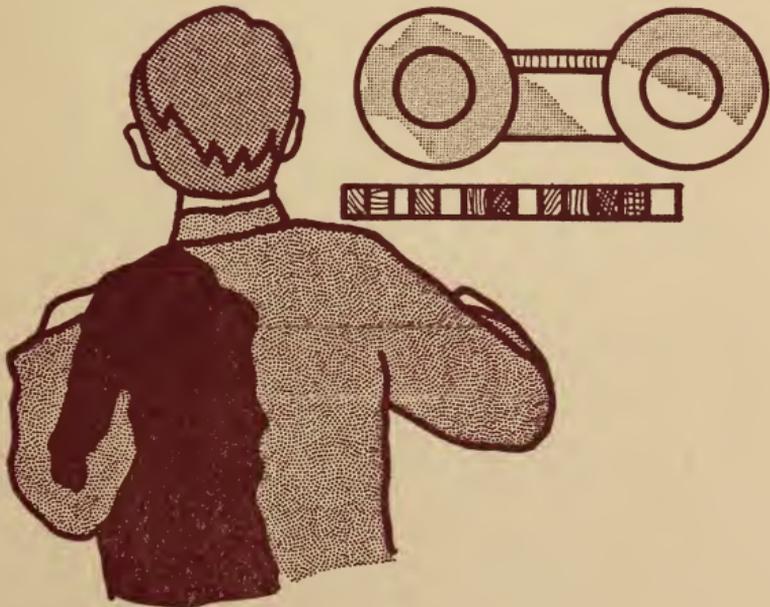
## Computer Operator

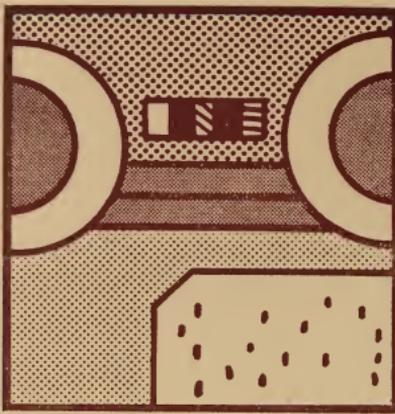
The increasing sophistication of data processing equipment throughout business and industry has created a shortage of skilled computer operators. The computer operator is responsible for the operation of computer machinery whose expense necessitates utilization. The operator must be knowledgeable enough about the data processing equipment he is operating so that he can efficiently monitor and control the computer according to prescribed operating instructions and detect malfunctions as they occur. The operator is responsible for increasing utilization and efficiency of data processing equipment by grouping jobs, scheduling, and the handling of peripheral equipment.

### Description Of Curriculum

The data processing equipment operator program at Central Piedmont Community College will provide the student with the knowledges essential for successful employment in computer operations. The knowledge gained by the student falls into three general categories: The mechanical details of the central processing unit and peripheral equipment; the ability to recognize the nature of the programs being run and the changes that are required to operate different kinds of programs; and a knowledge of computer manufacturer supplied programs such as compiler programs, utility programs, and control programs. The student is, therefore, responsible for the total operating system.

Each student is provided with the theoretical knowledge and actual operating experience while on campus and during the cooperative education phase of the program. A graduate from this curriculum will receive a diploma from the College.





### Suggested Sequence Of Required Courses For Computer Operator

Course Title		Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
EDP 3300	Introduction to Computer Concepts	3	0	3
ENG 3304	Communications I	3	0	3
BUS 3404	Elementary Typewriting I	3	2	4
or				
EDP 3310	Data Processing Fundamentals		0	1
EDP 5100	Computer Operations Seminar	1	0	1
BUS 1400	Introduction to Business	3	2	4
		<hr/>	<hr/>	<hr/>
		13	4	15
<b>Second Quarter</b>				
EDP 5314	Introduction to Computer Systems	3	0	3
EDP 5324	Programming I	2	2	3
EDP 5514	Computer Operations I	3	4	5
ENG 3305	Communications II	3	0	3
MAT 1300	Business Mathematics	3	0	3
		<hr/>	<hr/>	<hr/>
		14	6	17
<b>Third Quarter</b>				
EDP 5101	Computer Operations Seminar	1	0	1
EDP 5325	Programming II	2	2	3
EDP 5515	Computer Operations II	3	4	5
EDP 5524	General Data Processing Applications	3	4	5
ENG 3306	Communications III	3	0	3
		<hr/>	<hr/>	<hr/>
		12	10	17
<b>Fourth Quarter</b>				
EDP 5516	Computer Operations III	3	4	5
EDP 5904	Operation Project (Co-op)	0	0	10
SPH 1300	Oral Communications	3	0	3
		<hr/>	<hr/>	<hr/>
		6	4	18
ALTERNATE: In the event a student elects EDP 5904 in the third quarter of study the below schedule would be applicable.				
<b>Third Quarter</b>				
EDP 5325	Programming II	2	2	3
EDP 5515	Computer Operations II	3	4	5
EDP 5904	Operations Project (Co-op)	0	0	10
		<hr/>	<hr/>	<hr/>
		5	6	18
<b>Fourth Quarter</b>				
EDP 5101	Computer Operations Seminar	1	0	1
EDP 5524	General Data Processing Applications	3	4	5
ENG 3306	Communications III	3	0	3
EDP 5516	Computer Operations III	3	4	5
SPH 1300	Oral Communications	3	0	3
		<hr/>	<hr/>	<hr/>
		13	8	17

## Course Description

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## Computer Operator

**BUS 1400 Introduction to Business:** A comprehensive introduction to business operations and organization with an analysis of forms of business ownership, business functions and problems of management. (3—2) 4

**BUS 3404 Elementary Typewriting I:** An introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation and manuscripts. (3—2) 4

**EDP 3300 Introduction to Computer Concepts:** An introductory course in computers for the student who plans to pursue data processing as a career and for the student who desires a general non-technical knowledge of terminology and concepts. No previous knowledge or experience in data processing is required. Open to all interested. (3—0) 3

**EDP 3310 Data Processing Fundamentals:** A basic introductory course in the fundamental principles of data collection, recording, interpreting, and processing data. Emphasis is placed in input/output devices, data handling equipment, and the utilization of unit record equipment. (2—2) 3

**EDP 5100 Computer Operation Seminar:** A weekly seminar in which there will be programs on topics of particular interest to students in the Computer Operators Program. Guest lecturers, product demonstrations, and special reports on technical changes affecting these trades will be presented. Open to all students who are interested. (1—0) 1

**EDP 5101 Computer Operation Seminar:** A continuation of EDP 5100. (1—0) 1

**EDP 5314 Introduction to Computer Systems:** A detailed study of the function and physical characteristics of computer hardware and computer configurations. P.R. EDP 3300 or equivalent. (3—0) 3

**EDP 5324 Programming I:** A study of basic programming concepts and a compiler language. The student will write and execute basic programs involving card and printer files. Programming concepts will include arithmetic, decisions and looping. (2—2) 3

**EDP 5325 Programming II:** A continuation of Programming I. Programming concepts will be expanded to include sub-routines and macros, disk and tape files, and JCL pertaining to the compiler computation. The student will be given additional programming practice. P.R. EDP 5324. (2—2) 3

**EDP 5514 Computer Operations I:** A study of operational procedures and techniques for computer peripheral equipment. This course will also include basic operation of unit record equipment and an introduction to Job Control Language. P.R. EDP 3300 or equivalent. (3—4) 5

**EDP 5515 Computer Operations II:** A general study of procedures and techniques of operations in a computer system environment. Topics to be studied will be systems utilization, job scheduling for multiprocessing, run books, utility programs, operating systems, file security, teleprocessing. Special attention will also be given to computer console operation. P.R. EDP 5514. (3-4) 5

**EDP 5516 Computer Operations III:** A study of operating techniques and concepts for an operating system and the related job control language. In addition, a study of error and recovery techniques when running under an operating system. P.R. EDP 5325, EDP 5515 or equivalent. (3-4) 5

**EDP 5524 General Data Processing Applications:** A study of existing business electronic data processing systems, and related accounting functions for payroll, inventory management, and accounts receivable applications. Applications will be studied for various computer configurations beginning with a card system and going through tape and disk systems. P.R. EDP 3300 or equivalent. (3-4) 5

**EDP 5904 Operation Project (Co-Op):** A co-operative endeavor between Central Piedmont Community College and industry to give the student on-the-job training experience. The student will work in computer operations for a given company, on location, for a minimum of 20 hours per week. P.R. Third quarter standing and departmental approval. (0-0) 10

**ENG 3304 Communications I:** This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English. (3-0) 3

**ENG 3305 Communications II:** Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. ENG 3304. (3-0) 3

**ENG 3306 Communications III:** The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. ENG 3305. (3-0) 3

**MAT 1300 Business Mathematics:** A review of basic mathematics in business; interest and bank discounts, payroll records, taxes, retailing costs, markups and discounts, compound interest and annuities. (3-0) 3

**SPH 1300 Oral Communications:** Principles of effective interpersonal communications, with emphasis on communicating, listening and understanding in day-to-day conversational, conference, and interview situations. Personal involvement and use of special equipment for specific individual improvement. (3-0) 3

**EDP 5390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3-0) 3

## Dental Assisting

The primary function of the dental assistant is to serve as the chairside assistant to the dentist. Here she plays an active and integral role in dental procedures by preparing patients for treatment, setting out instruments in the order in which they are to be used, keeping the operation field clear during treatment, mixing filling materials and dental cements and passing these materials and instruments to the dentist as he needs them.

The trained dental assistant also checks equipment, sterilizes instruments and engages in such laboratory work as making study models of teeth, casting inlays, processing x-ray films and mounting them in appropriate holders.

In many offices the dental assistant also serves as receptionist and office manager, schedules appointments and keeps records.

### Description Of Curriculum

The curriculum at Central Piedmont Community College includes instruction in dental anatomy and physiology, bacteriology, pharmacology, oral pathology, dental materials, chairside assisting, typing, English, human relations and record keeping. A large portion of the student's time is spent in laboratory work and clinical experiences. A graduate from this curriculum will receive a diploma from the College and is eligible to take the National Certification Examination.





### Suggested Sequence Of Required Courses For Dental Assisting

First Quarter	Course Title	Hours per Week			Quarter Hours Credit
		Class	Lab.	Clin.	
DEN 5300	Anatomy and Physiology	3	0	0	3
DEN 5200	Introduction to Dental Assisting	2	0	0	2
DEN 5600	Dental Materials	3	0	9	6
DEN 5304	Preclinical Science I	3	0	0	3
PSY 5200	Human Relations	2	0	0	2
ENG 5500	Communication Skills	5	0	0	5
		18	0	9	21
<b>Second Quarter</b>					
DEN 5305	Preclinical Science II	3	0	0	3
DEN 5414	Dental Roentgenology	2	0	6	4
DEN 5424	Clinical Procedures I	2	0	6	4
BUS 5610	Medical Accounting	5	2	0	6
ENG 5301	Communication Skills II	3	0	0	3
		15	2	12	20
<b>Third Quarter</b>					
DEN 5525	Clinical Procedures II	4	0	3	5
DEN 5534	Dental Office Management	4	0	3	5
DEN 5344	Dental Office Practice I	0	0	9	3
ENG 5302	Speech	3	0	0	3
BUS 3404	Elementary Typewriting I	3	2	0	4
		14	2	15	20
<b>Fourth Quarter</b>					
DEN 5845	Dental Office Practice II	0	0	24	8
DEN 5204	Dental Assistant Seminar	2	0	0	2
		2	0	24	10

## Course Description

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### Dental Assisting

**BUS 3404 Elementary Typewriting I:** An introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation and manuscripts.

(3—2—0) 4

**BUS 5610 Medical Accounting:** The principles, techniques and tools of accounting are studied. Emphasis is placed upon understanding the mechanics of accounting—collecting, summarizing, analyzing and reporting information about service and mercantile enterprises. Opportunity is given for practical application of the principles learned.

(5—2—0) 6

**DEN 5200 Introduction to Dental Assisting:** An introduction to the dental profession; its purpose, history, progress and terminology; members of the dental health team and their education, training, function and respective professional organizations; laws and ethics governing the practice of dentistry; understanding and practical application of personal hygiene; professional and social conduct of the dental assistant.

(2—0—0) 2

**DEN 5204 Dental Assistant Seminar:** A study of personal responsibilities as a practitioner, including employee-employer relations, opportunities for continued development as a person and as a health worker, and evaluation of clinical experience. P.R. Fourth quarter standing in Dental Assisting Curriculum.

(2—0—0) 2

**DEN 5300 Anatomy and Physiology:** A lecture course designed to develop a knowledge and understanding of the basic structures surrounding the teeth, formation of the primary and permanent dentition, basic anatomy of individual teeth and the application of these to the carving of restorative patterns. The general anatomy of the body and basic concepts of the normal functions of body systems are also discussed.

(3—0—0) 3

**DEN 5304 Preclinical Science I:** This course is designed to show how bacteriology and dental health are related, and to demonstrate techniques for successfully coping with the bacteriological problems which arise in the dental office. A portion of the course is devoted to diet and nutrition as applied to dentistry.

(3—0—0) 3

**DEN 5305 Preclinical Science II:** This course covers oral pathology, pharmacology and first aid. Topics studied include fundamental concepts of the more common diseases and disease processes in the oral cavity, the indications, dosage, methods of administration and storage of common drugs and medications used in the dental office; first aid and emergency care for the dental patient. P.R. DEN 5300, DEN 5304.

(3—0—0) 3

**DEN 5344 Dental Office Practice I:** An introduction to practice in the dental office or dental clinic. Emphasis is on the role of assisting in the operator in a variety of limited dental procedures. P.R. Third quarter standing in the Dental Assisting Curriculum

(0—0—9) 3

**DEN 5414 Dental Roentgenology:** Lectures, demonstrations and clinical practice teach the dental assistant student the techniques of exposing, processing

and mounting intraoral roentgenograms. The student also learns the various types, speeds and methods of protection of films used in dentistry. Radiation hazards and safety measures, as well as the proper operation of the dental x-ray machine, are studied. P.R. DEN 5300, DEN 5600. (2-0-6) 4

**DEN 5424 Clinical Procedures I:** The identification of dental equipment and dental instruments for general dentistry and specialized areas. An introduction to chairside procedures. P.R. DEN 5300, DEN 5200, DEN 5600, DEN 5304. (2-0-6) 4

**DEN 5525 Clinical Procedures II:** A continuation in chairside procedures and techniques from DEN 5424, with emphasis placed on the eight specialties in dentistry. P.R. Third quarter standing in the Dental Assisting Curriculum. (4-0-3) 5

**DEN 5534 Dental Office Management:** Principles and procedures related to management of the dental office, including maintenance of inventories, ordering of supplies, financial records, clinical records, cavity classification and nomenclature, making appointments, telephone technique and establishing favorable patient relations. P.R. Third quarter standing in the Dental Assisting Curriculum. (4-0-3) 5

**DEN 5600 Dental Materials:** A study of the composition and source of materials employed in dentistry and the behavior of these materials under various treatments. The dental assistant student learns through lectures, demonstrations and laboratory exercises to identify and prepare these materials for any of the routine dental procedures in the general practice of dentistry and in the specialties of the dental profession. C.R. DEN 5300. (3-0-9) 6

**DEN 5845 Dental Office Practice II:** Practice in the dental office or dental clinic, assignments are rotated to encompass experience in office management, the dental laboratory and the operator. Emphasis is on the role of assisting in the operator in a variety of limited dental procedures. P.R. Fourth quarter standing in Dental Assisting Curriculum. (0-0-24) 8

**ENG 5301 Communication Skills II:** Emphasis in interpersonal oral communications and written communications for students' related fields. Includes charts, anecdotal materials, business correspondence and technical reports. (3-0-0) 3

**ENG 5302 Speech:** A study of the mechanics of speech; adaptation of method to purpose in speaking; preparation of specific kinds of speeches; presentation of extemporaneous, impromptu, prepared and memorized material. (3-0-0) 3

**ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems. (5-0-0) 5

**PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management. (2-0-0) 2

**DEN 5390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3-0-0) 3

## **Machinist**

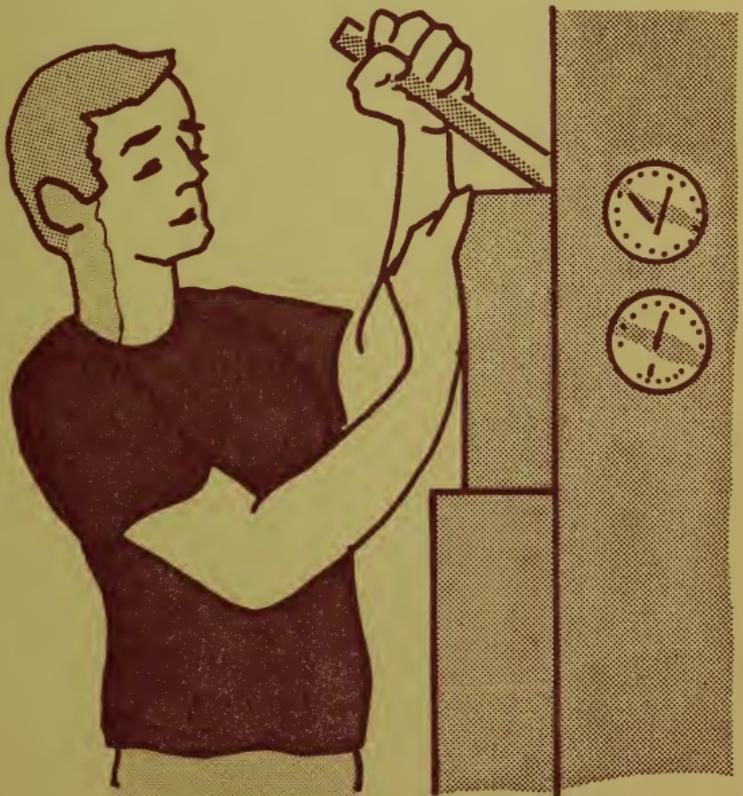
**(Machine Tool Trades)**

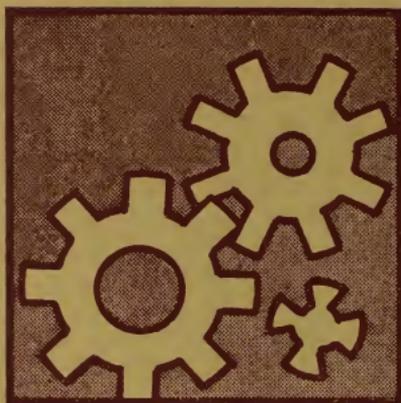
Modern manufacturing procedures require the services of a well-trained machinist to operate and maintain machine tools at peak efficiency. This highly-skilled craftsman transforms a common piece of metal into an intricate part meeting precise requirements. Wages are high, and for the person willing to work the rewards of learning the machine tool trades are unlimited.

### **Description Of Curriculum**

The machinist curriculum at Central Piedmont Community College is designed to provide an opportunity to gain entry-level employment in this most rewarding occupation.

Emphasis is placed on the basic operations which can be performed on the engine lathe and the milling machine. Additional training is provided in the use and care of each of the machine tools in the well-equipped lab. Possessing these fundamental skills the student of machine tool trades is able to become a valued member of the growing and dynamic manufacturing industry.





### Suggested Sequence Of Required Courses For Machinist (Machine Tool Trades)

Course Title		Hours per Week		Quarter
		Class	Lab.	Hours Credit
<b>First Quarter</b>				
MEC 5311	Basic Lathe Operations	1	6	3
MEC 5422	Basic Milling Operations	2	6	4
DFT 5300	Blueprint Reading	3	0	3
MAT 5304	Shop Mathematics I	3	0	3
ENG 5500	Communications Skills	5	0	5
		14	12	18
<b>Second Quarter</b>				
MEC 5313	Layout, Hand Tool, and Drill Press Procedures	1	6	3
MEC 5424	Grinding Machine Operations	2	6	4
PHY 5304	Shop Science I	2	2	3
DFT 5304	Blueprint Reading and Drawing: Machinist I	3	0	3
MAT 5305	Shop Mathematics II	3	0	3
		11	14	16
<b>Third Quarter</b>				
MEC 5315	Repair and Maintenance Operations	1	6	3
MEC 5426	Production Machining Techniques	2	6	4
MEC 5214	Heat Treatment of Metals I	1	3	2
PHY 5305	Shop Science II	2	2	3
WLD 5110	Basic Oxyacetylene Welding	0	3	1
WLD 5120	Basic Arc Welding	0	3	1
		6	20	13
<b>Fourth Quarter</b>				
MEC 5307	Machine Tool Application I	0	9	3
MEC 5308	Machine Tool Application II	0	9	3
PSY 5200	Human Relations	2	0	2
MEC 5215	Heat Treatment of Metals II	1	3	2
BUS 5200	Shop Management	2	0	2
		5	21	12

### Course Description

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numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

## Machinist

**BUS 5200 Shop Management:** An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer-employee relations. (2—0) 2

**DFT 5300 Blueprint Reading:** The interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures and notes. (3—0) 3

**DFT 5304 Blueprint Reading and Drawing: Machinist I:** This course provides an introduction to the interpretation and reading of machine blueprints. It also introduces the basic principles of mechanical drawing, including both sketching and the use of drawing instruments, as applied to machine parts. (3—0) 3

**ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems. (5—0) 5

**MAT 5304 Shop Mathematics I:** A review of all mathematical fundamental processes dealing with whole, mixed, decimal and fractional numbers. The necessary shop concepts for decimals, ratios, percentage, and all mathematical fundamental processes and procedures are emphasized and demonstrated. (3—0) 3

**MAT 5305 Shop Mathematics II:** The emphasis is placed on practical shop mathematical problems dealing with formulas, square root equations, ratios, applied geometry, and geometric constructions. Concepts for linear and volume measure are taught. Major emphasis is placed on the applied geometric measurements with the correct application of the required formula for the lay-out or problem involved. P.R. MAT 5304. (3—0) 3

**MEC 5214 Heat Treatment of Metals I:** The investigation of the properties of ferrous metals and tests to determine their uses. Some chemical metallurgy is included to provide background for the understanding of the physical changes and the causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloys of special steel, classification of steels and cast iron are topics for study. (1—3) 2

**MEC 5215 Heat Treatment of Metals II:** A continuation of the study of physical metallurgy. The non-ferrous metals, bearing metals (brasses, bronze, lead), light metals (aluminum and magnesium) and copper and its alloys are studied. Powder metallurgy, titanium, zirconium, indium and vanadium are included in the course. P.R. MEC 5214. (1—3) 2

**MEC 5307 Machine Tool Application I:** The student is assigned projects which allow him to use each of the skills learned in previous training. Emphasis is placed on proper work habits, safety, and planning. P.R. MEC 5311, MEC 5422, MEC 5313, MEC 5424. (0—9) 3

**MEC 5308 Machine Tool Application II:** A continuation of MEC 5307 allowing the student to specialize on one of the four major areas of machine tool operations. Projects are assigned which reinforce the students' manipulative skills. P.R. or C.R. MEC 5307. (0—9) 3

**MEC 5311 Basic Lathe Operations:** Lathe controls, R.P.M. selection, and speed and feed relationship are discussed in connection with preliminary lathe projects. Work holding devices and proper lathe tool usage is incorporated while the student learns to do straight turning, knurling, threading (external), boring and taper operations. Safety and precision are stressed throughout this beginning course. (1—6) 3

**MEC 5313 Layout, Hand Tool, and Drill Press Procedures:** Detailed instruction in the use of hammers, files, the combination square and other basic hand tools with major emphasis placed on proper use to achieve accuracy in layout.

The drill press is used to teach hole drilling, reaming, countersinking, counter-boring, and machine tapping. The student is assigned projects in multiple hole layout, drilling and tapping. After demonstrating ability in layout and drill press usage the student is introduced to operation of the numerically controlled drill press. (1-6) 3

**MEC 5315 Repair and Maintenance Operations:** One primary function of the machinist is the repair of broken and/or worn parts in moving machinery. This course will provide theory and practice for the student in the handling of hand and machine tools to repair broken parts or produce replacement parts so that machinery can be put into operation in the most economical manner. A planned sequence of repair techniques is introduced to the student as the course progresses. P.R. MEC 5311 and MEC 5422 or equivalent experience. (1-6) 3

**MEC 5422 Basic Milling Operations:** Milling machine controls are taught while students produce projects designed to build skill in cutter selection and speed and feed relationship. Operations performed include face milling, shoulder milling, fly-cutting, and horizontal plain milling cuts. On each project the student is instructed concerning methods of achieving accuracy and safe operational procedure. (2-6) 4

**MEC 5424 Grinding Machine Operations:** A thorough treatment of grinding machine theory and practice including abrasive selection, speed calculation, proper wheel and method selection, and safe grinding practice. The horizontal surface grinder, cylindrical grinder, and tool and cutter grinder are all used to provide the student with a well-rounded view of grinding machine application. (2-6) 4

**MEC 5426 Production Machining Techniques:** An indepth study of the processes used in production metal removal. Instruction and practice using the turret lathe, contour band saw, and horizontal milling machine encourage the student to utilize innovative techniques for machine tool setup. An interesting part of the study is learning to use process sheets and product planning methods before the parts are made. An introduction is also given to the tape controlled drill press with emphasis on operation. P.R. MEC 5311 and MEC 5422 or equivalent experience. (2-6) 4

**PHY 5304 Shop Science I:** An introductory course in physics and its application covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electro magnetism. The production, transmission, distribution, measurement and specific application of electrical energy also constitute major areas of study. (2-2) 3

**PHY 5305 Shop Science II:** Principles of force, motion, work, energy, power and mechanisms' mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 5304. (2-2) 3

**PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management. (2-0) 2

**WLD 5110 Basic Oxyacetylene Welding:** Welding demonstrations by the instructor and practice by students in the oxyacetylene welding shop. Safe and correct methods of assembling and operating the welding equipment are emphasized. Practice is given in surface welding, bronze welding, silver-soldering and flame cutting methods applicable to mechanical repair work. (0-3) 1

**WLD 5120 Basic Arc Welding:** Welding demonstration by the instructor and practice by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding. Emphasis on electric arc and hard surface methods applicable to mechanical repair work. (0-3) 1

**MEC 5390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3-0) 3

## Medical Office Assisting

The medical office assistant is a person trained to assist the licensed physician in his office or in a hospital out-patient department. The demands on the time of the physician have made the career of the medical office assistant one of the most rapidly growing and most important fields of work in recent years. The duties of the medical office assistant include: preparing patients for the physician's examination, cleaning and sterilizing equipment and supplies, collecting specimens, performing simple laboratory tests and carrying out the business-office activities of the doctor.

### Description Of Curriculum

A diploma will be awarded to students who satisfactorily complete the one year Medical Office Assisting curriculum. In addition to classroom study, each student will be provided with "on the job" practice under the direct supervision of a doctor and a medical assistant. These experiences are planned and coordinated by a member of the College faculty.

### Suggested Sequence Of Required Courses For Medical Office Assisting

First Quarter	Course Title	Hours per Week			Quarter Hours Credit
		Class	Lab.	Clin.	
MED 5304	Orientation to Medical Assisting	3	0	0	3
ENG 5500	Communication Skills	5	0	0	5
BUS 3204	Medical Terminology and Vocabulary I	1	2	0	2
BUS 3404	Elementary Typewriting I	3	2	0	4
BIO 3500	Basic Health Science	3	4	0	5
		15	8	0	19
<b>Second Quarter</b>					
BUS 4205	Medical Terminology and Vocabulary II	1	2	0	2
BUS 5610	Medical Accounting	5	2	0	6
ENG 5301	Communication Skills II	3	0	0	3
PSY 5200	Human Relations	2	0	0	2
BUS 3405	Elementary Typewriting II	3	2	0	4
		14	6	0	17
<b>Third Quarter</b>					
BUS 3311	Medical Office Procedures	3	0	0	3
MED 5504	Examination Room Procedures	3	0	6	5
MED 5404	Laboratory Procedures	2	0	6	4
BUS 4302	Medical Ethics and Law	3	0	0	3
EDP 3201	Automation Survey in Medical Facilities	2	0	0	2
		13	0	12	17
<b>Fourth Quarter</b>					
MED 5807	Medical Office Practice	0	0	24	8
MED 5414	Medical Office Assisting Seminar	4	0	0	4
		4	0	24	12



## Course Description

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### Medical Office Assisting

**BIO 3500 Basic Health Science:** This course is designed to give the student an understanding of basic science principles and their relationships to health. The course includes study of the structure and function of the human body, principles of food and nutrition and selected principles of microbiology.

(3-4-0) 5

**BUS 3204 Medical Terminology and Vocabulary I:** A study of the structure of medical words and terms. Emphasis is placed on spelling and defining commonly-used prefixes, suffixes, root words and their combining forms.

(1-2-0) 2

**BUS 3311 Medical Office Procedures:** This course is designed to acquaint the student with the responsibilities encountered by a medical office assistant during the work day. These responsibilities include the following: receptionist duties, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization and insurance claims.

(3-0-0) 3

**BUS 3404 Elementary Typewriting I:** An introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation and manuscripts.

(3-2-0) 4

**BUS 3405 Elementary Typewriting II:** Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript and correspondence. Speed requirement, 40 words per minute for five minutes. P.R. BUS 3404 or the equivalent.

(3-2-0) 4

**BUS 4205 Medical Terminology and Vocabulary II:** A continuation of BUS 3204 with greater emphasis on the understanding of terminology and its use in the medical office. P.R. BUS 3204.

(1-2-0) 2

**BUS 4302 Medical Ethics and Law:** Principles of office conduct, ethical responsibility in regard to information acquired and the obligation and responsibilities of the medical office secretary are studied. Laws governing medical practice are included.

(3-0-0) 3

**BUS 5610 Medical Accounting:** The principles, techniques and tools of accounting are studied. Emphasis is placed upon understanding the mechanics of accounting—collecting, summarizing, analyzing and reporting information about service and mercantile enterprises. Opportunity is given for practical application of the principles learned.

(5-2-0) 6

- EDP 3201 Automation Survey in Medical Facilities:** An overview of data preparation and processing as used in medical facilities utilizing electronic data processing methods and equipment. (2-0-0) 2
- ENG 5301 Communication Skills II:** Emphasis on interpersonal oral communications and written communications for students' related fields. Includes charts, anecdotal materials, business correspondence and technical reports. (3-0-0) 3
- ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems. (5-0-0) 5
- MED 5304 Orientation to Medical Assisting:** This course is designed to help the student in understanding the role of the medical office assistant. Emphasis is placed on the development of appreciations and attitudes that will assist in the establishment of realistic goals in personal and vocational development. (3-0-0) 3
- MED 5404 Laboratory Procedures:** This course is a study of the basic knowledge needed to become familiar with the laboratory tests most commonly performed in the doctor's office. Emphasis is placed on patient preparation for diagnostic procedures. The ability to obtain and collect specimens and carry out routine laboratory examinations such as urinalysis and blood count is developed. C.R. MED 5504. (2-0-6) 4
- MED 5414 Medical Office Assisting Seminar:** A study of the personal and vocational responsibilities of a practitioner in the field of medical office assisting. Discussion of problems encountered during experience in Medical Office Practice (MED 5807) offers an opportunity for reinforcement of learning. C.R. MED 5807; P.R. Fourth quarter standing. (4-0-0) 4
- MED 5504 Examination Room Procedures:** This course is designed to teach the skills needed by the medical office assistant in assisting the doctor in the examination room. The course of study includes proper physical and psychological preparation of the patient for the physician's examination and proper care of the supplies and instruments used. P.R. Completion of first two quarters. (3-0-6) 5
- MED 5807 Medical Office Practice:** This course is a practicum in medical office assisting. The student is assigned to a physician's office, clinic or outpatient department. Assignments are rotated to encompass experience in office management, examination room procedures and laboratory procedures. C.R. MED 5414; P.R. Fourth quarter standing. (0-0-24) 8
- PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management. (2-0-0) 2
- MED 5390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required. (3-0-0) 3

## Nurse Aide

The need for the nurse aide as a member of the nursing care team is becoming increasingly important. The establishment of Medicare and Medicaid programs has been largely responsible for creating demands for more nursing personnel in hospitals, nursing homes and convalescent centers. A shortage of registered and licensed practical nurses to fill the increasing staffing demands of institutions further emphasizes the need for auxiliary workers such as the nurse aide. Demands for professional members of the nursing staff to assume the greater responsibility for technical and detailed aspects of nursing care create an even greater need for the assistance of the nurse aide.

## Description Of Curriculum

The Nurse Aide course provides the opportunity for students to gain an understanding of the principles essential to giving basic patient care.



The course of study is 11 weeks (one quarter) in length and provides both classroom and supervised clinical (hospital) experience.

Upon successful completion of the course, the student will be awarded a diploma which will qualify her to work as a nurse aide in the general hospital, nursing homes and other health related agencies.

## Required Courses For Nurse Aide

	Course Title	Hours per Week			Quarter
		Class	Lab.	Clin.	Hours Credit
<b>First Quarter</b>					
NUR 5700	Nurse Aide Skills I	3	0	12	7
NUR 5701	Nurse Aide Skills II	3	0	12	7
ENG 5500	Communication Skills	5	0	0	5
PSY 5200	Human Relations	2	0	0	2
		<hr/>	<hr/>	<hr/>	<hr/>
		13	0	24	21

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## Nurse Aide

**ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems.

(5-0-0) 5

**NUR 5700 Nurse Aide Skills I:** This course is planned to provide the opportunity for the students to gain an understanding of the principles of basic patient care. Emphasis is placed on the development of the basic skills and therapeutic measures necessary to meet the patients' daily needs.

(3-0-12) 7

**NUR 5701 Nurse Aide Skills II:** A continuation of Nurse Aide Skills I, and is designed to help the student to become more proficient in the basic skills and therapeutic measures necessary in meeting patients' daily needs.

(3-0-12) 7

**PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management.

(2-0-0) 2

## Practical Nursing

The demand for licensed practical nurses far exceeds the supply of available trained people. Hospitals, clinics, nursing homes, doctors' offices and industries need licensed practical nurses.

The graduate licensed practical nurse is an important member of the health team. In addition to the nursing care she is able to give to convalescing patients and to those with chronic or handicapping conditions, she is also equipped to assist the registered nurse in providing care for the more seriously ill and injured. Both men and women find opportunities for service as licensed practical nurses.

### Description Of Curriculum

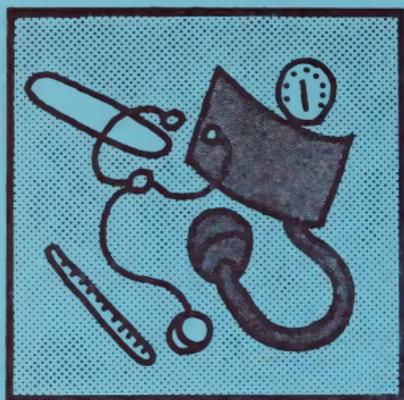
The practical Nursing curriculum at Central Piedmont Community College provides the opportunity for students to gain the knowledge, appreciations and skills which are needed by an effective practitioner of practical nursing.

The course of study is one year (four quarters) in length and provides both classroom and supervised hospital practice.

Opportunity is provided for the study of nursing care of patients of all age groups in medical-surgical nursing, care of the sick child, and care of the mother and newborn infant.

Upon completion of the curriculum, the graduate is awarded a diploma by the College and is qualified to take the licensing examination given by the North Carolina Board of Nursing, Raleigh, North Carolina.





## Suggested Sequence Of Required Courses For Practical Nursing

	Course Title	Hours per Week			Quarter Hours Credit
		Class	Lab.	Clin.	
<b>First Quarter</b>					
ENG 5500	Communication Skills	5	0	0	5
PSY 5200	Human Relations	2	0	0	2
BIO 3500	Basic Health Science	3	4	0	5
NUR 5203	Orientation to Vocational Relationships	2	0	0	2
NUR 5704	Introduction to Patient Care	3	4	6	7
		<hr/> 15	<hr/> 8	<hr/> 6	<hr/> 21
<b>Second Quarter</b>					
NUR 5400	Basic Principles of Drug Administration	3	2	0	4
NUR 5904	Care of Patients with Medical-Surgical Conditions I	3	2	15	9
		<hr/> 6	<hr/> 4	<hr/> 15	<hr/> 13
<b>Third Quarter</b>					
NUR 5507	Care of Mothers and Newborn Infants	1	4	6	5
NUR 5705	Care of Patients with Medical-Surgical Conditions II	2	4	9	7
		<hr/> 3	<hr/> 8	<hr/> 15	<hr/> 12
<b>Fourth Quarter</b>					
NUR 5504	Care of Infants and Children	1	4	6	5
NUR 5104	Vocational Relationships	1	0	0	1
NUR 5717	Care of the Seriously Ill and Injured	2	4	9	7
		<hr/> 4	<hr/> 8	<hr/> 15	<hr/> 13

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## Practical Nursing

**BIO 3500 Basic Health Science:** This course is designed to give the student an understanding of basic science principles and their relationships to health. The

course includes study of the structure and function of the human body, principles of food and nutrition and selected principles of microbiology.

(3-4-0) 5

**ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems.

(5-0-0) 5

**NUR 5104 Vocational Relationships:** This course is designed to orient the student to her role as a licensed practical nurse. It includes the study of opportunities in practical nursing and the obligations and responsibilities of the licensed practical nurse as a person, a worker and a citizen. Relationships with other members of the health team to more fully achieve the goals of nursing are emphasized throughout the course. C.R. NUR 5504.

(1-0-0) 1

**NUR 5203 Orientation to Vocational Relationships:** This course is designed to assist the student in understanding herself, her vocation and the individual needs of her patients. Emphasis is placed on the development of appreciations and attitudes which will assist the student in understanding her role as a potential worker in nursing, in establishing effective relationships with her co-workers and patients, and in establishing realistic goals for herself in her personal and vocational development.

(2-0-0) 2

**NUR 5400 Basic Principles of Drug Administration:** The basic concepts of drug therapy and an appreciation of the responsibilities and the necessary limitations of the licensed practical nurse in the administration of medications are emphasized. P.R. NUR 5704.

(3-2-0) 4

**NUR 5507 Care of Mothers and Newborn Infants:** This course is designed to provide opportunities for students to acquire the knowledge, understanding and skill needed for rendering safe and effective nursing care to the maternity patient and newborn infant. Classroom instruction provides the background essential for planned clinical experiences centered around analysis of nursing needs and formulation of a nursing care plan to meet individual patient needs. P.R. NUR 5904.

(1-4-6) 5

**NUR 5504 Care of Infants and Children:** This course is designed to provide opportunities for students to acquire the knowledge, understanding and skills needed for rendering safe and effective nursing care of infants and children. Classroom instruction provides the background essential for planned clinical experiences centered around analysis of nursing needs and formulation of a nursing care plan to meet individual patient needs. P.R. NUR 5705.

(1-4-6) 5

**NUR 5717 Care of the Seriously Ill and Injured:** This course is designed to prepare the student for participation in the care of seriously ill patients and for development of further skills in the care of selected patients. Emphasis is placed on the assisting role of the licensed practical nurse. Classroom instruction provides the background for planned clinical experiences. C.R. NUR 5104.

(2-4-9) 7

**NUR 5704 Introduction to Patient Care:** This course is planned to provide the opportunity for students to gain a knowledge of the principles which are basic to effective and safe nursing care. Emphasis is placed on the development of the essential skills for the performance of those nursing measures that normally are the responsibility of the licensed practical nurse. Lecture and planned class laboratory experiences are followed by related clinical experiences. C.R. NUR 5203.

(3-4-6) 7

**NUR 5705 Care of Patients with Medical-Surgical Conditions II:** A continuation of NUR 5904. P.R. NUR 5904.

(2-4-9) 7

**NUR 5904 Care of Patients with Medical-Surgical Conditions I:** This course is designed to provide the student the opportunity to gain an understanding of the nursing needs of patients who have various medical-surgical conditions and to develop further understanding of the common drugs and therapeutic measures of concern to the practical nurse. Lecture and class laboratory provide the background for selected clinical experiences. C.R. NUR 5400.

(3-2-15) 9

**PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management.

(2-0-0) 2

**NUR 5390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman, and vice president is required.

(3-0-0) 3



Many of the parts used in missiles, automobiles, airplanes, refrigerators and thousands of other products are joined by a widely-used process known as welding. Weldors join metals by applying intense heat and sometimes pressure to metals to melt the edges to form a permanent bond. Of the more than thirty five different ways of welding metals, electric arc, oxyacetylene and resistance welding are the three most important.

Welding provides the opportunity to see the world and make good money at the same time. Skilled weldors work on bridges, buildings, dams and other construction projects around the globe. A well-trained weldor can travel if he wishes, or he can obtain one of the many jobs now available in Charlotte for a person skilled in this trade.

### Description Of Curriculum

The curriculum at Central Piedmont Community College provides the opportunity for students to develop the skills necessary in the operation of a variety of types of welding equipment. Other courses such as metals, shop math and blueprint play important parts in developing a first-class weldor. A graduate from this curriculum will receive a diploma from the College.





### Suggested Sequence Of Required Courses For Welding

	Course Title	Hours per Week Class	Week Lab.	Quarter Hours Credit
<b>First Quarter</b>				
WLD 5810	Oxyacetylene Welding and Cutting	4	12	8
WLD 5411	Oxyacetylene Welding and Cutting I (2-6) 4			
WLD 5412	Oxyacetylene Welding and Cutting II (2-6) 4			
DFT 5300	Blueprint Reading	3	0	3
ENG 5500	Communication Skills	5	0	5
MAT 5304	Shop Mathematics I	3	0	3
		<hr/>	<hr/>	<hr/>
		15	12	19
<b>Second Quarter</b>				
WLD 5820	Arc Welding	4	12	8
WLD 5421	Arc Welding I (2-6) 4			
WLD 5422	Arc Welding II (2-6) 4			
MAT 5305	Shop Mathematics II	3	0	3
DFT 5400	Blueprint Reading and Sketching	3	2	4
PHY 5304	Shop Science I	2	2	3
		<hr/>	<hr/>	<hr/>
		12	16	18
<b>Third Quarter</b>				
WLD 5830	Inert Gas Welding	4	12	8
WLD 5431	Inert Gas Welding I (2-6) 4			
WLD 5432	Inert Gas Welding II (2-6) 4			
WLD 5240	Introductory Pipe Welding	1	3	2
MEC 5214	Heat Treatment of Metals I	1	3	2
PHY 5305	Shop Science II	2	2	3
		<hr/>	<hr/>	<hr/>
		8	20	15
<b>Fourth Quarter</b>				
WLD 5654	Commercial and Industrial Practices	2	12	6
WLD 5355	Commercial & Industrial Practices I (1-6) 3			
WLD 5356	Commercial & Industrial Practices II (1-6) 3			
WLD 5267	Certification Practice	0	6	2
WLD 5268	Certification Testing	2	0	2
MEC 5215	Heat Treatment of Metals II	1	3	2
PSY 5200	Human Relations	2	0	2
BUS 5200	Shop Management	2	0	2
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		9	21	16

### Course Description

Each course listing begins with three capitalized letters and a number. This is the abbreviation of the course name and the number is the position in the curriculum. Following the number is the name of the course and a brief description of the course. Following the description may be a PR or a CR or both. This means that there is a course that is a prerequisite or a corequisite. The numbers in parentheses indicate the number of lecture and laboratory hours. The last number indicates the number of credit hours for completion of the course. The courses are listed alphabetically by the abbreviation or prefix letters.

### Welding

**BUS 5200 Shop Management:** An introduction to the business world, problems

- of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer-employee relations. (2—0) 2
- DFT 5300 Blueprint Reading:** The interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures and rates. (3—0) 3
- DFT 5400 Blueprint Reading and Sketching:** A thorough study is made of trade drawings in which welding procedures are indicated. Emphasis is given to the interpretation, use and application of welding symbols, abbreviations and specifications. (3—2) 4
- ENG 5500 Communication Skills:** The course deals with the development of ability to communicate effectively through the use of speaking, listening, writing and reading skills. Emphasis is placed upon overall improvement in all of these areas as related to the individual's job connected problems. (5—0) 5
- MAT 5304 Shop Mathematics I:** A review of all mathematical fundamental processes dealing with whole, mixed, decimal and fractional numbers. The necessary shop concepts for decimals, ratios, percentage, and all mathematical fundamental processes and procedures are emphasized and demonstrated. (3—0) 3
- MAT 5305 Shop Mathematics II:** The emphasis is placed on practical shop mathematical problems dealing with formulas, square root equations, ratios, applied geometry, and geometric constructions. Concepts for linear and volume measure are taught. Major emphasis is placed on the applied geometric measurements with the correct application of the required formula for the lay-out or problem involved. P.R. MAT 5304. (3—0) 3
- MEC 5214 Heat Treatment of Metals I:** The investigation of the properties of ferrous metals and tests to determine their uses. Some chemical metallurgy is included to provide background for the understanding of the physical changes and the causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloys of special steel, classification of steels, and cast iron are topics for study. (1—3) 2
- MEC 5215 Heat Treatment of Metals II:** A continuation of the study of physical metallurgy. The non-ferrous metals, bearing metals (brasses, bronze, lead), light metals (aluminum and magnesium) and copper and its alloys are studied. Powder metallurgy, titanium, zirconium, indium and vanadium are included in the course. P.R. MEC 5214. (1—3) 2
- PHY 5304 Shop Science I:** An introductory course in physics and its application covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electro-magnetism. The production, transmission, distribution, measurement and specific application of electrical energy also constitute major areas of study. (2—2) 3
- PHY 5305 Shop Science II:** Principles of force, motion, work, energy, power and mechanisms' mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 5304. (2—2) 3
- PSY 5200 Human Relations:** The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management. (2—0) 2
- WLD 5240 Introductory Pipe Welding:** This course is designed to provide practice in the welding of pressure piping in the horizontal, vertical and horizontal fixed position using shielded metal arc welding processes. P.R. WLD 5820. (1—3) 2
- WLD 5267 Certification Practice:** This course involves practice in welding the various materials to meet certification standards, using oxyacetylene, electric arc, gas tungsten arc, and gas metal arc welding processes. P.R. WLD 5810, WLD 5820, WLD 5830. (0—6) 2
- WLD 5268 Certification Testing:** The student uses various tests including guided bend and tensile tests to check the quality of his work. Emphasis is placed on attaining skill in producing quality welds. P.R. WLD 5810, WLD 5820, WLD 5830. (2—0) 2
- WLD 5355 Commercial and Industrial Practices I:** The major objective of the course is to build skills through practices in simulated industrial processes and

techniques including sketching and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding and nondestructive tests and inspection. P.R. WLD 5810, WLD 5820, WLD 5830. (1-6) 3

**WLD 5356 Commercial and Industrial Practices II:** A continuation of skill building through practices in simulated industrial processes and techniques including sketching and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and following these directions to build the product. Continued emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding and nondestructive tests and inspection. P.R. WLD 5355. (1-6) 3

**WLD 5411 Oxyacetylene Welding and Cutting I:** An introduction to the history of oxyacetylene welding, the principles of welding and cutting, nomenclature of the equipment and assembly of units are the major topics of this course. Welding procedures such as practice of puddling and carrying the puddle, running flat beads, different types of joints in the flat position. Safety procedures in the use of tools and equipment are stressed. (2-5) 4

**WLD 5412 Oxyacetylene Welding and Cutting II:** A continuation of the study of oxyacetylene welding and cutting. Welding procedures such as practice of different types of joints in the various positions, brazing and hard and soft shouldering are studied. Safety procedures in the use of tools and equipment are stressed. Students perform mechanical testing and inspection to determine quality of welds. P.R. WLD 5411. (2-5) 4

**WLD 5421 Arc Welding I:** A study of the operation of AC transformer and DC motor generator arc welding sets. Studies are made of welding heats, polarities and electrodes for use in joining various metal alloys by the arc welding process. Welding procedures such as practice of different types of joints in the flat position. Safety procedures are emphasized throughout the course. (2-6) 4

**WLD 5422 Arc Welding II:** A continuation of the study of arc welding. Welding procedures such as practice of different types of joints in the various positions, intermittent and build-up. Welds are made and tested so that the student may detect his weaknesses in welding. Safety procedures are emphasized throughout the course. P.R. WLD 5421. (2-6) 4

**WLD 5431 Inert Gas Welding I:** An introduction to and practical operations in the use of inert-gas-shield arc welding. A study is made of the equipment, operation, safety and practice in the flat position. A thorough study of such topics as principles of operation, shielding gases, and filler rods. (2-6) 4

**WLD 5432 Inert Gas Welding II:** A continuation of the study of inert-gas-shield arc welding. Welding procedures such as practice of different types of joints in the various positions. A thorough study of such topics as process variations and applications, manual and automatic welding. Safety procedures are emphasized. P.R. WLD 5431.

**WLD 5654 Commercial and Industrial Practices:** The major objective of the course is to build skills through practices in simulated industrial processes and techniques including sketching and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding and nondestructive tests and inspection. P.R. WLD 5810, WLD 5820, WLD 5830. (2-12) 6

**WLD 5810 Oxyacetylene Welding and Cutting:** An introduction to the history of oxyacetylene welding, the principles of welding and cutting, nomenclature of the equipment and assembly of units are the major topics of this course. Welding procedures such as practice of puddling and carrying the puddle, running flat beads, different types of joints in all positions. Safety procedures in the use of tools and equipment are stressed. (4-12) 8

**WLD 5820 Arc Welding:** A study of the operation of AC transformer and DC motor generator arc welding sets. Studies are made of welding heats, polarities and electrodes for use in joining various metal alloys by the arc welding process. Welding procedures such as practice of different types of joints in all positions. Safety procedures are emphasized throughout the course. (4-12) 8

**WLD 5830 Inert Gas Welding:** An introduction to and practical operations in the use of inert-gas-shield arc welding. A study is made of the equipment, operation, safety and practice in all positions. A thorough study of such topics as principles of operation, shielding gases, and filler rods, process variations and applications, manual and automatic welding. (4-12) 8

**WLD 5390 Individual Study:** This offering is being made to provide students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment would provide access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Approval of the sponsor, department chairman and vice president is required. (3-0) 3



## Faculty And Staff

**Norma V. Adams, Child Care Training Center**

Undergraduate work at University of South Carolina.

**James Franklin Alexander, Counselor**

B.S., 1951 (Johnson C. Smith University); M.S., 1963 (North Carolina Agricultural and Technical State University). Additional graduate work at University of North Carolina at Charlotte.

**Joseph Anthony Alvarez, Communications**

B.A., 1968, M.A. 1971, (University of Florida).

**Henry Ammerpohl, Economics—Chairman**

B.S. 1950, M.A., 1952 (Bradley University). Additional work at University of Chicago.

**Carol P. Anderson, Advancement Studies**

B.S., 1968 (Florida State University). Additional graduate work at Florida State University.

**George Anderson, Mathematics**

B.S., 1951 (Johnson C. Smith University); M.S., 1963 (Atlanta University).

**Ralph L. Anderson, Counselor**

B.S. Ed., 1967, M.S. Ed., 1968 (Northern Illinois University).

**Marilyn J. Andresen, Commercial Art**

B.F.A., 1951 (University of Nebraska); M.A., 1964 (Michigan State University).

**Mary S. Arnold, Director, Student Center**

B.A., 1970 (Johnson C. Smith University).

**Willie Milton Artis, Advancement Studies**

B.S., 1965 (Fayetteville State University).

**Wilna Elaine Ates, Data Processing**

B.S., 1947 (Millsaps College); A.A., 1970 (Central Piedmont Community College). Additional graduate work at University of South Carolina. Medical Research Technician.

**Eva Grace Atkinson, Advancement Studies**

B.A., 1953 (Agricultural and Technical State University); M.A., 1959 (Teachers College, Columbia University).

**Paul D. Atwell, Communications**

B.A., 1958 (High Point College); M.A., 1964 (Duke University).

**John Bakita, Chairman—History**

A.A., 1957 (St. Lawrence Junior College); A.B., 1959 (St. Bernard College); M.A., 1965 (Eastern Michigan University); Ph.D. candidate (Michigan State University). Additional graduate work at St. Louis University, University of Michigan.

**Carl N. Ballard, Accounting**

B.S., 1969, M.A., 1970 (Appalachian State University).

**Sara Warren Ballard, Secretarial Curricula**

B.S., 1966, M.A., 1967 (Appalachian State University).

**Jane Starr Barnes, Accounting**

B.S., 1942 (Miami University). Certified Public Accountant.

**Myra Adelaide Barron, History**

A.B., 1930 (Winthrop College); M.A., 1951 (Peabody College). Additional graduate work at Clemson University and Appalachian State University.

**Joseph T. Barwick, Communications**

A.B., 1967, M.A.T., 1968 (University of North Carolina at Charlotte).

**Janette Forbes Beaver, Physical Therapy Assisting**

B.S., 1943 (Appalachian State University). Certificate in Physical Therapy. U.S. Army Ashford General Hospital, 1944.

**Wilfred C. Berlin, Business Administration**

A.B., 1966 (Catawba College); M.B.A., 1968 (East Tennessee State University). Licensed Real Estate Broker.

**Frances P. Best, Associate Degree Nursing**

B.S.N., 1958 (University of North Carolina at Chapel Hill). Registered Nurse.

**Anne S. Bivens, Associate Degree Nursing**

Diploma, 1955 (Presbyterian Hospital School of Nursing); B.S., 1957 (Queens College). Additional graduate work at University of North Carolina at Charlotte. Registered Nurse.

**Brenda Carole Blackwelder, Biology**

B.A., 1963 (Queens College); M.A., 1965 (Wake Forest University); Ph.D. candidate (University of South Carolina). Additional graduate work at Duke University, University of South Florida. Certificate, Secondary Education—Biology and Art.

**Hoyle Lee Blalock, Jr., Chairman—Electronic Data Processing**

B.S., 1961, M.Ed., 1966 (North Carolina State University at Raleigh). Professional Certificate in Data Processing.

**Douglas M. Bostic, Vehicle Maintenance**

A.A., 1965 (Central Piedmont Community College); Diploma, 1969 (Central Piedmont Community College).

**Costas S. Boukouvalas, Program Planner, Services for Handicapped**

A.A., 1960 (Warren Wilson College); B.S., 1963 (North Carolina State University). Additional graduate work at North Carolina State University.

**William Loy Bowers, Welding**

Diploma, 1967 (Central Piedmont Community College).

**Beverly Elaine Boyce, Economics**

B.A., 1969, M.A., 1972 (University of Missouri at St. Louis). Additional graduate work at University of Southern Illinois.

**Thomas G. Brady, Jr.—Chairman, Learning Laboratory, Assistant Chairman—Advancement Studies**

A.B., 1963 (Elon College). Graduate work at North Carolina State University, and University of North Carolina at Charlotte.

**James Edward Branch, Advancement Studies**

B.S., 1957 (Winston-Salem State University). M.Ed. candidate (University of North Carolina at Charlotte).

**Sanford L. Broome, Business Administration**

B.S.B.A., 1960 (Carson Newman College). Additional graduate work at University of Tennessee, University of North Carolina.

**Bernard Lee Brown, Counselor**

B.A., 1948 (Johnson C. Smith University); M.A., 1952 (Columbia University). Additional graduate work at North Carolina Central University at Durham, and Agricultural and Technical State University at Greensboro.

**Ernest Louis Brown, Business Administration**

Ch.E., 1943 (University of Cincinnati); M.B.A., 1954 (University of Chicago).

**Nancy Shearin Bryan, Secretarial Curricula**

B.S., 1964, M.A., 1967 (Appalachian State University).

**Rolla Gene Bryant, Chairman, Fine Arts—Music**

B.M., 1950 (Central Methodist College); M.Ed., 1957 (University of Missouri). Additional graduate work at University of Illinois.

**Patricia Jean Buchanan, Counselor for Handicapped**

B.A., 1971 (Furman University).

**Herbert Burns, Coordinator—Business and Police Science Programs**

B.S., 1964, M.A., 1967 (Appalachian State University).

**Carol H. Burton, Extension**

B.S., 1965 (Johnson C. Smith University).

**Ray Von Caldwell, Biology**

A.B., 1953 (Lenoir Rhyne College); M.Ed., 1959 (University of North Carolina at Chapel Hill). Additional graduate work at Converse College.

**E. Worth Campbell, Jr., Vice President, Learning Resources**

B.S., 1953 (Appalachian State University); M.Ed., 1958 (University of North Carolina at Chapel Hill). Additional graduate work at North Carolina State University, and Converse College.

**H. Edwin Campbell, Director, Occupational Extension**

B.A., 1960 (Samford University). Additional study at University of Tennessee and College of William and Mary.

**Jean L. Campbell, Associate Degree Nursing**

B.S., 1954, M.N., 1965 (Emory University). Registered Nurse.

**Lemuel Hooker Cannon, Jr., Chairman—Engineering Technology**

B.M.E., 1947 (North Carolina State University). Registered Professional Engineer.

**Jane Lindsay Carriker, Practical Nursing**

Diploma, 1942 (Montreat Junior College); Diploma, 1945 (Presbyterian Hospital School of Nursing). Additional work at North Carolina State University and University of North Carolina at Chapel Hill.

**Joseph C. Champion, Jr., Dean, Adult Education Division**

B.S., 1938, M.S., 1962 (North Carolina Agricultural and Technical State University). Additional study at University of California at Los Angeles, Columbia University, University of North Carolina at Chapel Hill, University of North Carolina at Greensboro, North Carolina Central University at Durham.

**Jean C. Chase, Communications**

A.B., 1946 (University of North Carolina at Greensboro); M.A., 1947 (University of Michigan). Additional study at University of Virginia.

**Karol C. Cheek, Biology**

B.S., 1960, M.S., 1961 (University of South Carolina).

**William Edward Cheek, Chemistry**

B.S., 1953, M.A., 1957 (Appalachian State University); M.A. 1962 (George Peabody College). Additional graduate work at University of North Carolina at Chapel Hill, Michigan State, Duke University, Vanderbilt University, Kansas State University and University of North Carolina at Charlotte.

**Nancy Carolyn Cheshire, Associate Degree Nursing**

B.S.N., 1959 (Duke University); M.S., 1963 (University of Maryland).

**Thomas E. Cheshire, Psychology**

B.A., 1967 (North Carolina Wesleyan College); M.A., 1968 (Appalachian State University). Licensed Psychological Examiner.

**Bessie Chronaki, Humanities**

A.B., 1961, M.A., 1966 (Duke University). Additional graduate work at Duke University.

**Anda W. Cochran, Child Care Training Center**

B.S., 1969 (University of North Carolina at Greensboro). Member American Home Economics Association.

**Judith K. Coen, Chemistry**

B.S., 1970 (University of North Carolina at Charlotte).

**Bob G. Coggins, Police Science—Criminology**

B.S., 1967 (Pembroke State University); M.Ed., 1968 (West Chester State College); Ph.D., 1970 (University of New Mexico).

**Charles Wearn Connelly, Jr., Business Administration**

B.A., 1965 (Furman University); J.D., 1968 (University of South Carolina); L.L.M., 1970 (George Washington University). Member of American Arbitration Society. N.C. Real Estate Broker. Attorney at Law—South Carolina and Washington, D. C.

**Gloria M. Cooper, Chemistry**

B.S., 1953 (Bennett College); M.S., 1964 (North Carolina Central University). Additional graduate work at Michigan State University.

**C. Boyd Correll, Physical Science**

A.A., 1970 (Central Piedmont Community College).

**J. Leon Coulter, Social Science**

B.S., 1951, M.A., 1953 (Appalachian State University); Ed.D., 1960 (Florida State University). Additional graduate study at Appalachian State University.

**Patsy Dennis Craddock, Associate Degree Nursing**

Diploma, 1956 (Presbyterian Hospital School of Nursing); B.S., 1958 (Queens College).

**Linda Carol Craven, Humanities**

A.B., 1964 (High Point College); M.A., 1966 (Wake Forest College). Additional graduate work at University of North Carolina at Chapel Hill and University of Birmingham, England.

**Joyce D. Crawford, Secretarial Curricula**

B.S., 1962 (Barber Scotia College). Additional study at University of North Carolina at Greensboro.

**Macy A. Creek, Communications**

B.A., 1964 (Westminster College); M.A. 1969 (University of Missouri). Additional graduate work at University of Pittsburgh.

**Ruby Foster Crosier, Accounting**

B.S., 1940 (Catawba College); M.Ed., 1969 (University of North Carolina at Greensboro).

**Dennis Cudd, Media Services**

A.A., 1967 (Central Piedmont Community College); B.A. candidate, University of North Carolina at Charlotte.

**Dean Brady Davis, Assistant for Administrative Services**

B.Ed. (Eastern Illinois Teachers College); M.S., 1950 (North Carolina State University). Additional work at Rutgers University.

**Douglas Forrest DeGroot, Mathematics**

B.S., 1953 (United States Naval Post Graduate College); M.A.T., 1970 (North Carolina State University).

**Lois W. Dixon, Business Administration**

B.S., 1962 (Pfeiffer College); M.Ed., 1967 (University of North Carolina at Chapel Hill).

**Lewis Fisher Drum, Chemistry**

B.S., 1938 (Lenoir Rhyne College); B.Ch.E., 1939, M.S., 1941 (North Carolina State University). Additional graduate work at Appalachian State University and North Carolina State University.

**Marion F. Durham, Counselor**

A.B., 1935 (University of North Carolina at Greensboro); M.Ed., 1953 (University of North Carolina at Chapel Hill).

**Dorsett Edmunds, Communications**

A.B., 1965 (Vassar College); M.A., 1970 (Columbia University). Additional graduate work Columbia University. New York State Teacher's Certificate.

**Gracie L. Edwards, Biology**

A.A., 1969 (Central Piedmont Community College).

**Nancy Emerson, Social Science**

B.S., 1963, M.S., 1967 (Kansas State College).

**Bernard Engel, Extension**

B.S., 1959 (New York University); M.Ed. candidate, University of North Carolina at Charlotte. Licensed Insurance Broker—New York and North Carolina.

**Erik C. Esselstyn, Assistant to the President**

A.B., 1959, M.A.T., 1965 (Yale University); C.A.S., 1970 (Harvard Graduate School of Education); Ed.D. candidate Harvard University.

**A. G. Farkas, Civil Engineering and Agricultural Technology**

B.S.C.E., 1948, M.S.C.E., 1959 (Washington University). Additional graduate work at Duke University and North Carolina State University. Registered Professional Engineer.

**Barton G. Fetterman, Mathematics**

B.S., 1933, M.A., 1941 (Ohio State University).

**J. David Flanagan, Social Science**

B.A., 1963, M.A., 1969 (University of Florida).

**Theodore R. Fletcher, Mechanical Technology**

A.B., 1940 (Duke University). Graduate work at New York University and University of North Carolina at Charlotte.

**Linda Elaine Floyd, Humanities**

B.A., 1966 (Wake Forest University); M.A., 1969 (Appalachian State University).

**Ruth Ann Fogartie, Communications**

B.A., 1946, M.A., 1948 (University of Texas).

**Elizabeth June Franklin, Advancement Studies**

B.A., 1951, M.A., 1956 (California State College). Additional graduate work at Los Angeles City College and Marshall University.

**Louis F. Freeman, Fine Arts—Art**

B.F.A., 1951 (School of the Art Institute of Chicago); M.Ed., 1966 (University of Missouri). Additional graduate work at Washington University.

**Bernice Poole Fulson, Practical Nursing**

Diploma, 1952 (Kate Bitting Reynolds Memorial Hospital); B.S., 1964 (Queens College). Additional study at University of North Carolina at Charlotte.

**Robert Curtis Fussell, Jr., Assistant Chairman—Electrical and Electronic Engineering Technology**

B.S., 1968 (Valparaiso Technical Institute). Graduate work at University of North Carolina.

**Hal Garmon, Automotive Body Repair**

Diploma 1967, Diploma 1968; A.G.E., 1970 (Central Piedmont Community College).

**Sanford O. Garmon, Vehicle Mechanics**

Diploma, 1968, Diploma, 1969 (Central Piedmont Community College).

- Eleanor Willoughby Garrett, Secretarial Curricula**  
A.B., 1937 (Bowling Green College of Commerce, Western Kentucky University). Graduate work at University of Kentucky and University of North Carolina at Chapel Hill.
- James H. Gaudreault, Electronic Data Processing and Electromechanical Engineering Technology**  
B.S., 1965 (Creighton University); M.A., 1966 (University of California at Los Angeles). Additional work at the University of Texas at Austin.
- Frances M. Gay, Media Services**  
A.A., 1958 (Charlotte College); B.A., 1960 (University of North Carolina at Chapel Hill).
- Melvin L. Gay, Counselor**  
B.A., 1967 (North Carolina Wesleyan College); M.A., 1969 (University of North Carolina at Chapel Hill).
- Dorothy Gove Glover, Practical Nursing**  
Diploma, 1941 (Mercy College of Nursing); B.A., 1971 (Limestone College). Additional study at University of Michigan, University of Georgia, and North Carolina State University. Registered Nurse.
- Robert Lyle Gossett, Physical Therapy Assisting**  
B.S., 1950 (University of Dayton); M.P.H., 1968 (University of North Carolina at Chapel Hill). Certificate in Physical Therapy (Cleveland Clinic).
- Alexander Gow, III, Counselor**  
A.B., 1958 (Duke University); M.Ed., 1968 (University of North Carolina at Chapel Hill).
- Harvey Odell Graham, Supervisor, Adult Basic Education Program**  
B.S., 1941, M.A., 1944 (Johnson C. Smith University). Additional work at North Carolina State University, George Washington University, University of North Carolina at Charlotte, Ohio State University and Union Theological Seminary.
- Gary York Greene, Air Conditioning and Refrigeration**  
B.S., 1954 (North Carolina State University). Additional study at University of Tennessee.
- Richard B. Gregory, Secretarial Curricula**  
B.S., 1962, M.A., 1966 (Appalachian State University).
- Hoke S. Griffin, History**  
B.A., 1962, M.A.T., 1966 (University of Florida). Additional study at Florida State University.
- Thomas Edward Griffin, Chairman—Advancement Studies**  
B.S., 1952 (Western Carolina University); M.A., 1964 (Appalachian State University). Additional graduate work at University of North Carolina at Chapel Hill and North Carolina State University.
- Robert James Grubbs, Jr., Registration Coordinator**  
A.A., 1971 (Central Piedmont Community College).
- David Michael Gullede, Automotive Body Repair**  
Diploma, 1969 (Central Piedmont Community College).
- Ronald Corbin Gyles, Electrical and Electronics Engineering Technology**  
B.E.E., 1943, B.S., 1950, M.I.A., 1956 (North Carolina State University). Registered Professional Engineer.
- Richard H. Hagemeyer, President**  
B.S., 1939 (Bowling Green University); M.A., 1951 (University of Michigan); Ed.D., 1961 (Wayne State University).
- Mitchell Hagler, Jr., Assistant Chairman—Communications**  
B.S., 1960 (Appalachian State University); M.A., 1965 (George Peabody College). Additional graduate work at Appalachian State University.

- James E. Hall, Biology**  
B.S., 1966, M.A., 1968 (Appalachian State University).
- Tracy S. Hammond, Director, Operations and Maintenance**
- Janet Smith Hampton, Child Care Training Center**  
B.S., 1946 (New York State University).
- Donald Lee Harbert, Vice President, Career Programs**  
B.S., 1958 (Eastern Illinois University); M.A., 1960 (Ball State University); Ed.S., 1967, Ed.D., 1968 (University of Florida).
- Haskell E. Harrill, Air-Conditioning and Refrigeration**  
Diploma, 1963 (Coyne Electrical School).
- Gayle Melton Hartley, Communications**  
A.A., 1958 (Wingate Junior College); A.B., 1960, M.Ed., 1962 (University of North Carolina at Chapel Hill); Ph.D., 1971 (University of South Carolina).
- Jeanne Gamble Hartley, Advancement Studies**  
B.A., 1962 (University of Florida). Additional study at University of Florida.
- Helen H. Hartman, Registrar**  
Diploma, 1934 (Wingate College).
- Earl Hassett, Accounting**  
J.D., 1951 (DePaul University); M.A., 1960 (Rockford College). Certified Public Accountant.
- Willmore Browning Hastings, Communications**  
B.S., 1932 (University of Illinois); M.A., 1961 (Southern Illinois University).
- Jack K. Hawkins, Business Administration**  
B.S., 1967, M.B.A., 1968 (Murray State University).
- Linda P. Heath, Electronic Data Processing**  
B.S.S.A., 1963, M.Ed., 1971 (University of North Carolina at Greensboro).
- Jane Elliott Heedick, Chairman—Medical Office Assisting**  
Diploma, 1943 (Presbyterian Hospital School of Nursing); A.B., 1970 (Limestone College). Additional work at North Carolina State University, Queens College and University of North Carolina at Charlotte.
- Everlene A. Henderson, Commercial Art**  
B.F.A., 1966 (Ringling School of Art).
- Anna Dunlap Hendrix, Advancement Studies**  
A.B., 1945 (Western Carolina University); M.S., 1964 (University of Tennessee). Additional graduate work at University of North Carolina, Sorbonne University, University of Delaware, and Appalachian State University.
- William J. Henry, Mathematics**  
B.S., 1939 (United States Military Academy); M.A.T., 1970 (North Carolina State University).
- James Martin Hesser, Counselor**  
A.B., 1931, B.M., 1932 (Ohio Wesleyan University); M.A., 1938 (New York University). Additional graduate work at University of Pittsburgh and New York University.
- Thomas Gilbert Hethcox, Automotive Mechanics**  
Diploma, 1951 (Southern Vocational Institute); Diploma, 1953 (Class A School, U.S.N.). Additional study at Mitchell College.
- Carroll Ann Hicks, Assistant Director, Library Services**  
A.B., 1963 (Meredith College); M.S.L.S., 1967 (University of North Carolina at Chapel Hill).
- Lynn P. Hidell, Library Services**  
B.A., 1969 (Lake Forest College); M.S., 1970 (Drexel University).
- Marilyn Patton Hodges, Dental Hygiene**  
A.A., 1969 (Central Piedmont Community College); B.S., 1971 (University of North Carolina at Chapel Hill). Registered Dental Hygienist.

- Robert Gilman Hoelzel, Comptroller**  
A.B., 1950 (Harvard University). Graduate work at University of Michigan.
- Bette B. Holmes, Assistant Chairman—Dental Assisting**
- Mitzi Carter Holton, Associate Degree Nursing**  
Diploma, 1956 (Presbyterian Hospital School of Nursing); B.S., 1958 (Queens College). Additional study at University of North Carolina at Charlotte. Registered Nurse.
- Irene B. Honeycutt, Communications**  
B.A., 1963 (Bob Jones University); M.A., 1969 (East Tennessee State University).
- Barbara Smith Hoover, Child Care Training Center**  
A.B., 1944 (University of North Carolina at Greensboro). Additional study at University of North Carolina at Charlotte, Appalachian State University and Union Theological Seminary.
- Richard William Horstman, Biology**  
A.A., 1967 (Central Piedmont Community College); B.S., 1969 (Appalachian State University). Additional graduate work at Appalachian State University.
- Betty Mayo Hudson, Advancement Studies**  
B.A., 1969 (University of North Carolina at Charlotte).
- B. Forney Huffman, Traffic and Transportation**  
B.S., 1956 (University of Tennessee). Additional work at Appalachian State University. Registered Practitioner before the Interstate Commerce Commission.
- Martin Eugene Hulbert, Electromechanical Engineering Technology**  
B.A., 1962 (Washington and Lee University). Additional study at University of Virginia, Lynchburg College and University of Hamburg.
- Oron Wayne Huneycutt, Vehicle Maintenance**  
Diploma, 1966, Diploma, 1970 (Central Piedmont Community College).
- Claud Caldwell Hunter, Assistant Chairman—Trade, Vehicle Maintenance**  
Undergraduate work at North Carolina State University.
- David Lee Hunter, Coordinator—College Transfer Program**  
B.S., 1957 (Johnson C. Smith University); M.S., 1965 (Atlanta University). Additional graduate study at Rutgers University and North Carolina State University.
- William D. Huskey, Business and Police Science**  
J.D., 1940 (American University). Member of the Bar: District of Columbia, North Carolina, U.S. Tax Court, and U.S. Supreme Court.
- Sonja T. Hutchins, Secretarial Curricula**  
B.S.S.A., 1967 (University of North Carolina at Greensboro); M.A., 1968 (Appalachian State University). Additional work at Appalachian State.
- Hugo J. Ibanez, Humanities**  
B.A., 1970 (University of North Carolina at Charlotte); M.A., University of North Carolina at Greensboro.
- Henry Bruce Jackson, Director, Computer Center**  
B.S., 1966 (East Carolina University). Additional graduate work at East Carolina University and North Carolina State University.
- William L. Jackson, Chairman—Social Science**  
A.B., 1952 (University of Miami); M.S., 1962 (Utah State University). Additional graduate work at University of South Carolina.
- Magaly Jane, Humanities**  
B.S., 1964 (University of Tampa); M.A., 1968 (Appalachian State University).
- Meriam P. Jarvis, Advancement Studies**  
A.A., 1966 (Central Piedmont Community College); B.A., 1972 (University of North Carolina at Charlotte). Additional study at University of North Carolina at Greensboro.

- Dora T. Johnson, Chairman—Secretarial Curricula**  
B.S., 1957 (Agricultural and Technical State University); M.A., 1960 (Columbia University). Additional graduate work at University of North Carolina at Greensboro.
- Camille N. Johnston, Placement Officer**  
A.B., 1946 (Duke University).
- James B. Jones, Jr., Mathematics**  
B.A., 1963 (Lenoir Rhyne College); M.A., 1965 (University of South Carolina). Additional graduate work at Florida State University.
- Mary H. Jordan, Associate Degree Nursing**  
B.S., 1964 (University of North Carolina at Chapel Hill). Additional study at University of North Carolina at Charlotte. Registered Nurse.
- Richard Norman Joyner, Electrical/Electronics Engineering Technology**  
Diploma, 1952 (U.S. Army Electronic/Microwave Technology School).
- Robert C. Juergensen, Director, Operations Center**  
A.A., 1969 (Central Piedmont Community College).
- Barbara Johnson Kasler, Fine Arts—Art**  
B.A., 1958 (Queens College); M.Ed., 1968 (Wayne State University).
- Mattie T. Kearney, Secretarial Curricula**  
B.S., 1953 (Agricultural and Technical State University); M.A., 1960 (Columbia University). Additional study at University of North Carolina at Greensboro.
- George Manuel Kennedy, Commercial Art**  
B.A., 1967 (University of North Carolina at Charlotte).
- William Patrick Kerns, Technical Math, EDP**  
B.S., 1967 (University of North Carolina at Charlotte); M.S., 1969 (North Carolina State University).
- Frances Rhyne King, Associate Degree Nursing**  
B.S.N., 1964 (University of North Carolina at Chapel Hill). Additional study at University of North Carolina at Charlotte. Registered Nurse.
- Paul C. Kirby, Director of Institutional Research**  
B.S., 1953 (University of Connecticut); M.S., 1968 (North Carolina State University). Additional graduate work at North Carolina State University.
- A. Victor Kirkman, Jr., Counselor**  
B.A., 1955 (Wake Forest University); M.A., 1964 (Appalachian State University).
- Helen T. Kiser, Associate Degree Nursing**  
Diploma, 1953 (Mercy School of Nursing). Additional study at Limestone College. Registered Nurse.
- James A. Kiser, Jr., Vice President, Student Services**  
A.B., 1952 (Lenoir Rhyne College); M.Ed., 1953 (University of North Carolina at Chapel Hill). Additional graduate work at North Carolina State University. Ed.D. candidate (University of California at Berkeley).
- Jessie Propst Kiser, Director, Nursing Curricula**  
Diploma, 1942 (Shelby Hospital School of Nursing); B.S.N.E., 1957 (Duke University); M.S.N., 1962 (University of North Carolina at Chapel Hill). Registered Nurse.
- Marvin Krieger, Economics**  
B.A., 1968 (Lenoir Rhyne); M.A., 1969 (Wake Forest University). Additional study at Duke University and University of North Carolina at Charlotte.
- Pauline Dove Lamal, Fine Arts—Art**  
B.A., 1965 (Mary Baldwin College); M.F.A., 1969 (George Washington University).

- Connie C. Lanier, Social Science**  
A.B., 1960, M.A., 1962 (Emory University). Licensed Psychological Examiner.
- Byron W. Lathan, Applied Mathematics and Science**  
B.S., 1935, M.A., 1953 (Appalachian State University).
- Jonathan T. Launt, English**  
B.A., 1967, M.A.T., 1969 (University of North Carolina at Chapel Hill).
- Margaret Sharpe Lawing, Communications**  
B.A., 1957 (Elon College); M.A., 1968 (University of North Carolina at Greensboro). Additional graduate study at University of Northern Colorado and Western Carolina University.
- Theodore H. Lewis, Data Processing**  
Undergraduate work at Western Carolina University.
- M. B. Liles, Jr., Biology**  
B.S., 1960 (Wake Forest University); M.A., 1969 (Appalachian State University).
- Otto A. Lockee, Vice President, Continuing Education**  
B.S., 1950; M.Ed., 1951 (Texas Christian University). Registered Professional Engineer.
- Beth Amos Long, Dental Assisting**  
A.A., 1966 (Lees-McRae Junior College); Diploma, 1967 (Central Piedmont Community College). Certified Dental Assistant.
- Jimmy B. Looper, Sr., Advancement Studies**  
B.S., 1968 (Agricultural and Technical State University).
- Aimee Schultz Losse, Mathematics**  
A.B., 1940 (University of Wisconsin); M.A., 1967 (Kansas State College). Additional graduate work at Kansas State College.
- Shirley Ann Luckadoo, Secretarial Curricula**  
A.A., 1963 (Gardner-Webb College); B.A., 1965 (Furman University); M.A.T., 1971 (Winthrop College).
- Vaughn C. Luckadoo, Human Services Associate**  
B.A., 1968 (Wake Forest University). Additional study at University of North Carolina.
- Lydia W. MacLaughlin, Mathematics**  
B.A., 1935 (University of Kentucky); M.A., 1940 (University of Michigan).
- Marshall M. Maddox, Social Science**  
A.A., 1959, B.A., 1964, M.Ed., 1969 (University of Florida). Additional graduate work at University of Florida.
- Edward Van Martin, Counselor**  
B.A., 1959 (Johnson C. Smith University). Additional study at University of Minnesota and Virginia Commonwealth University.
- Raymond Via Mason, Chairman, Trade and Extension**  
Undergraduate work at North Carolina State University.
- Larry W. Massey, Data Processing**  
A.A., 1971 (Central Piedmont Community College).
- Virginia B. Mathis, Humanities**  
B.A., 1936 (Winthrop College); M.A., 1942 (Duke University). Additional study at Columbia University, Florida State University and Harvard University.
- Philip B. Mauldin, Social Science**  
A.B., 1960 (University of North Carolina at Chapel Hill); M.A., 1968 (Appalachian State University).
- James B. May, Accounting**  
M.C.S., 1938 (Benjamin Franklin University). Certified Public Accountant.

**J. Aaron McAlexander, Physics**

B.S., 1961 (Appalachian State University); M.A.T., 1965 (University of North Carolina). Additional graduate work at University of North Carolina, and Texas Agricultural and Mechanical University.

**Ben W. McCoy, Assistant Chairman—Trade, Air-Conditioning and Refrigeration**

C.M., (Refrigeration Service Engineers Society); A.S.H.R.A.E.; Refrigerating Engineers & Technicians Association. Undergraduate work at University of Chicago; North Carolina State University. North Carolina State License in Commercial Refrigeration, Plumbing, Heating 1, (Steam & Hydronics), Heating 2 (Air-Conditioning) and Heating 3 (Warm Air).

**Walter W. McCulloch, Director of Information**

B.A., 1949 (Elon College); M.Ed., 1968 (University of North Carolina at Greensboro). Graduate of National Academy of Broadcasting. Additional graduate work at University of North Carolina at Chapel Hill, University of Oklahoma, and University of Wisconsin.

**Jean Stovall McDuffie, Library Services**

B.A., 1964 (Johnson C. Smith University); M.S.L.S., 1965 (Atlanta University).

**Ralph L. McGrath, Cash Receipts Administrator**

**Constella E. McGriff, Biology**

A.A., 1968 (Central Piedmont Community College). Additional study at University of North Carolina at Charlotte.

**William A. McIntosh, Vice President, Educational Planning and Evaluation**

A.B., 1960 (Elon College); M.S., 1964, Ed.D., 1969 (North Carolina State University).

**Leon B. McKim, Chairman—Police Science and Criminology**

B.A., 1949 (University of Florida); M.A., 1969 (Florida Atlantic University).

**Jeanne E. McKinnon, Mathematics**

A.B., 1940 (Erskine College); M.Ed., 1953 (University of North Carolina at Chapel Hill); M.A., 1963 (University of Oregon). Additional graduate study at University of Wyoming and University of Chicago.

**R. W. McMurray, Accounts Control Supervisor**

Diploma, 1959 (Robert Morris Junior College).

**Edith McPheters, Accounting**

B.S., 1946 (Furman University). Additional work at Duke University and the University of North Carolina at Chapel Hill. Certified Public Accountant.

**Manuel Matthew Menser, Assistant Chairman—Trade, Welding**

Undergraduate work at North Carolina State University.

**Arthur Meyer, Chairman—Biology**

B.S., 1929 (Oklahoma State University); M.S., 1930 (Kansas State University); Ph.D. candidate (University of Tennessee).

**Allison D. Monroe, Electronic Data Processing**

B.S., 1966, M.S., 1968 (North Carolina State University). Certified Data Processor.

**H. Lynn Moretz, Accounting**

B.S., 1961 (Appalachian State University); M.Ed., 1966 (University of Maryland).

**Juanita Owen Morris, Associate Degree Nursing**

Diploma, 1940 (Mercy College of Nursing); Diploma, 1942 (Vanderbilt University Hospital Anesthesia School); B.S., 1949 (Queens College). Registered Nurse.

**Mildred W. Morrison, Assistant Director, Library Services**

A.B., 1938 (Hollins College); B.L.S., 1939 (Pratt Institute); M.A., 1970 (Appalachian State University). Additional work at University of North Carolina and Queens College.

**John Deal Morrow, Chairman—Physics**

B.S., 1957 (East Carolina University); M.S., 1967 (University of Tennessee). Additional graduate work at North Carolina State University, Appalachian State University and Oak Ridge Institute of Nuclear Studies.

**Robert A. Morrow, Jr., Chairman—Mathematics**

B.S., 1959, M.S., 1961 (North Carolina State University).

**Jack R. Mullis, Director, Construction and Contractual Service**

**Virginia Nanin, Commercial Art**

A.A., 1960 (Peace College).

**Helen Glovier Nason, Communications**

B.A., 1969 (University of North Carolina at Charlotte). Additional work at University of North Carolina at Charlotte.

**John A. Needy, Jr., Chairman—Health Education and Recreation**

B.S., 1940 (Ohio Northern University); M.A., 1947 (Columbia University). Additional graduate work at Indiana University.

**Clara E. Nelson, Accounting**

B.S., 1962, M.A., 1965 (Appalachian State University).

**John A. Nelson, Trade, Assistant Chairman—Vehicle Mechanics**

B.S., 1964 (Stout State College).

**Robert Stanley O'Dell, Mechanical Engineering Technology**

B.S., 1951, M.A., 1959 (East Tennessee State University). Additional work at University of North Carolina at Chapel Hill and North Carolina State University.

**Henry Allen Oder, Jr., Assistant Chairman—Business Administration**

A.B., 1947, LL.B., 1956 (Washington and Lee University).

**Phoebe Oplinger, Director, Library Services**

A.B., 1946 (Maryville College); M.S.L.S., 1959 (Drexel University).

**Susan Rone Osborne, Financial Aid Officer**

B.A., 1967 (University of North Carolina at Charlotte).

**Hubert Edwin Parks, Director, Media Services**

B.S., 1969 (University of West Florida).

**Mary Lou Paschal, Fine Arts, Music**

B.M., 1957 (Oberlin Conservatory of Music); M.M., 1959 (University of Mississippi). Additional work at Harvard University.

**Lois S. Petrowski, Director, Child Care Training Center**

B.S., 1937, M.S., 1939 (North Carolina State University). Additional graduate work at Duke University and University of North Carolina at Chapel Hill. Member Academy of Certified Social Workers and member National Association of Social Workers.

**Norman Holmes Petty, Chairman—Business Administration**

B.A., 1962 (Wheaton College); M.B.A., 1970 (Georgia State University).

**Susan Ann Phifer, Communications**

A.B., 1965 (Converse College); M.Ed., 1969 (University of North Carolina at Greensboro).

**James G. Polk, Communications**

A.B., 1950 (Johnson C. Smith University); M.A., 1962 (New York University).

**Mary A. Poole, Communications**

B.A., 1960 (Queens College); M.A.T., 1965 (University of North Carolina at Chapel Hill). Additional graduate work at University of North Carolina and Winthrop College.

**Carma Young Pressley, Dental Hygiene**

A.A., 1967 (Central Piedmont Community College). Registered Dental Hygienist.

**Ernest DeReece Privette, Secretarial Curricula**

B.S., 1949 (East Tennessee State University); M.A., 1952 (Columbia University). Additional work at Appalachian State University, North Carolina State University, and University of North Carolina at Chapel Hill.

**Roy Propst, Mathematics, Electrical Electronics Technology**

B.S.E.E., 1965, M.S.E.E., 1968, Ph.D., 1970 (North Carolina State University).

**Annette M. Randall, Communications**

A.B., 1967 (University of North Carolina at Chapel Hill); M.A., 1968 (Appalachian State University).

**David Richard Randall, Counselor and Night Administrator**

B.S., 1962 (Campbell College); M.A., 1968 (East Carolina University). Additional work at University of North Carolina at Chapel Hill and North Carolina State University.

**Daniel Edwin Read, Jr., Biology**

B.S., 1961 (University of Florida); M.A., 1964 (Duke University).

**Karl William Reber, Metallurgy**

B.Ch.E., 1947 (University of Detroit); M.S.E., 1951 (University of Florida). Additional graduate work at University of Tennessee and North Carolina State University.

**Ann C. Reid, Secretarial Curricula**

B.S., 1959 (Appalachian State University). Graduate work at Appalachian State University.

**Rufus Eugene Reid, Jr., Advancement Studies**

B.S., 1958, M.A., 1965 (Appalachian State University).

**Bradford J. Reynolds, Chairman—Human Services Associate**

A.B., 1962 (Elon College); M.Ed., 1967 (University of North Carolina at Greensboro). Additional work at University of West Virginia.

**Raymond G. Richard, Humanities**

B.A., 1953 (Universite' Saint-Louis, Edmundston, NB Canada); M.A., 1963 (Universite' Laval, Quebec, PQ, Canada). Additional work at University of London and University of South Carolina.

**Cynthia L. Ricketson, Communications**

B.S., 1964, M.A., 1966 (University of Tennessee).

**J. C. Robertson, Manager, Plant Operations and Purchasing**

B.S., 1962 (University of Maryland). Additional work at Washington University and Industrial College of the Armed Forces.

**Louise Parsons Robinson, Counselor**

B.S., 1960, M.S., 1963 (Oklahoma State University).

**Loretta Burch Rojo, Accounting**

B.S., 1965 (Winthrop College); M.Ed., 1969 (University of North Carolina at Greensboro).

**Elizabeth Sproul Ross, Fine Arts—Art**

B.A., 1959 (Queens College); M.F.A., 1965 (University of North Carolina at Greensboro).

**Nancy C. Rouzer, History**

B.A., 1942 (Duke University); M.A.T., 1964 (Winthrop College). Additional work at Winthrop College.

**Roland L. Roy, Educational Consultant—Student Services**

B.S., 1965 (Atlantic Christian College); M.Ed., 1967, Ed.D., 1971 (North Carolina State University). Additional work at Oklahoma State University and University of California at Los Angeles.

**Virginia Ryan, Counselor**

B.S., 1958, M.S., 1964 (University of Southern Mississippi). Additional work at University of Southern Mississippi.

**Bob G. Sampson, Communications**

B.A., 1965 (Western Kentucky University); M.A., 1968 (Ball State University).

**James Howard Sasser, History, Economics**

A.B., 1959 (High Point College); M.A., 1960, Ed.S., 1968 (George Peabody College for Teachers). Additional graduate work at University of North Carolina at Chapel Hill, Western Carolina University and George Peabody College for Teachers.

**John Levi Sauder, Assistant to Executive Vice President**

B.S., 1936 (Pennsylvania State College at Millersville); M.A., 1947 (University of Virginia). Additional graduate work at North Carolina State University and University of Virginia. Licensed North Carolina Real Estate Broker.

**Elizabeth Parrish Seitz, Associate Degree Nursing**

A.D.N., 1969 (Central Piedmont Community College). Registered Nurse.

**Adele Shapiro, Mathematics**

A.B., 1956 (Brooklyn College); M.S., 1959 (Yeshiva University Graduate School of Education). Additional graduate work at Hofstra University.

**Wesley E. Shaw, Engineering**

B.S.C.E., 1959 (North Carolina State University). E.I.T.

**Robert Donald Shepherd, Counselor**

B.S., 1964 (University of Tennessee); M.S., 1970 (Florida State University).

**Kathryn T. Shirkey, Child Care Training Center**

B.A., 1952 (Albion College).

**Noah Gayle Simmons, Executive Vice President**

B.S., 1948 (Southeast Missouri State College); M.A., 1951, Ed.D., 1960 (Washington University). Post-doctoral study at Michigan State University.

**Dannie M. Simpson, Extension and Trade**

Diploma, 1966 (Central Piedmont Community College).

**Arthur Skibbe, Counselor**

B.S.M.E., 1940 (Pennsylvania State University); M.Ed., 1969 (East Carolina University). Diploma, 1945 (Command & General Staff School). Registered Professional Engineer, Licensed Marine Engineer.

**Ben F. Small, Director, Procurement and Inventory Control**

**Bruce Henry Smith, Accounting**

B.A., 1957 (Lenoir Rhyne College); M.B.A., 1964 (Auburn University). Additional work at University of North Carolina at Chapel Hill. Certificate in Municipal Administration.

**Charles Aaron Smith, Vehicle Maintenance**

Diploma, 1966 (Central Piedmont Community College).

**William J. Smith, Chairman—Communications**

A.B., 1963 (Suffolk University); M.A., 1965 (Tufts University). Doctoral study at Florida State University.

**Harry G. Snyder, Chairman—Dental Programs**

D.D.S., 1934 (Washington University); 2 year PG Certificate 1952 New York University School of Dentistry. Additional work at University of Wisconsin.

**George John Soos, Mechanical Engineering Technology**

B.S.E., 1944 (Hungarian Royal Technical Military Academy). Additional work at North Carolina State University. Registered Professional Engineer.

**Donna Thompson Speegle, Library Services**

B.S., 1967, M.Ed., 1970 (Auburn University).

**James Williamson Squires, Economics**

A.B., 1936 (Yale University). Chartered Financial Analyst. (C.F.A.)

**Ernest H. Stanback, Director, Contractual Programs**

B.S., 1945 (Agricultural and Technical State University); M.Ed., 1956 (Cornell University). Additional work at University of North Carolina at Chapel Hill, Duke University, University of North Carolina at Charlotte, Morgan College, and Hampton Institute.

**Charles C. Starnes, Fine Arts—Music**

B.S., 1956 (East Carolina University); M.Ed., 1967 (University of North Carolina at Chapel Hill). Additional work at Florida State University, and Oberlin College Conservatory.

**Larry M. Stearns, Biology**

B.S., 1962 (Maryville College); M.S., 1965 (University of Tennessee); Ph.D., 1970 (Clemson University).

**Gordon Steve Stillwell, Automotive Mechanics**

Diploma, 1968, 1969 (Central Piedmont Community College).

**Robert L. Stone, Jr., History**

B.A., 1962 (University of Tulsa); M.S., 1967 (Kansas State College). Additional graduate work at Kansas State College, University of Tennessee, Wichita State University, University of North Carolina at Charlotte, Eden Theological Seminary and McCormick Theological Seminary.

**Eleanor M. Stothart, Communications**

A.B., 1938 (Miami University); M.A., 1939 (Columbia University). Additional study at Queens College, Davidson College. Graduate work at University of North Carolina at Charlotte.

**Sidney T. Stovall, Chairman—Humanities**

A.B., 1939 (Duke University); M.A., 1941 (University of Michigan); M.A., 1952 (Columbia University). Additional graduate work at University of Colorado and Oxford University, England.

**Sam J. Strickland, Assistant Director, Media Services**

A.A., 1972 (Central Piedmont Community College). Additional study at Famous Artist School.

**Beverly S. Suggs, Communications**

B.A., 1970 (University of North Carolina at Charlotte). Additional study at University of North Carolina at Chapel Hill.

**Ross C. C. Surphlis, Director of Student Activities**

B.S., 1959 (St. Louis University); A.M., 1962 (University of Missouri). Additional work at University of Illinois.

**George H. Sutcliffe, Business Administration**

B.S., 1960 (Davidson College); M.A., 1961 (East Carolina University).

**Susan C. Sutphin, Library Services Department**

B.A., 1968 (Huntingdon College); M.S.L.S., 1969 (University of North Carolina at Chapel Hill).

**Earl Donald Talbert, Electronic Data Processing**

A.B., 1951 (Catawba College). Graduate work at North Carolina State University and Appalachian State University. Professional Certificate in Data Processing.

**William S. Temple, Advancement Studies**

A.B., 1956 (Lenoir Rhyne College); M.Ed., 1962 (University of North Carolina at Chapel Hill). Additional graduate work at Duke University.

**George A. Timblin, Electrical/Electronics Engineering Technology**

B.S.E.E., 1962 (Duke University).

**Mark F. Tinkham, Physics**

A.B., 1931, M.Ed., 1957 (University of North Carolina at Chapel Hill). Additional graduate work at Davidson and Florida State University.

**Henry F. Tonn, Social Science**

B.S., 1964 (University of North Carolina); M.S., 1965 (New Mexico Highlands University). Additional work at North Carolina State University. Licensed Psychological Examiner.

**Vaud A. Travis, Jr., Vice President, Transfer and Business Programs**

B.S., 1947 (Northeastern State College); M.S., 1948, Ed.D., 1966 (Oklahoma State University).

**John Douglas Tripp, Sr., Director, Administrative Services, Student Services**

B.S., 1947 (North Carolina State University); M.R.E., 1951 (Southwestern Baptist Theological Seminary). Additional graduate work at Appalachian State University, North Carolina State University, University of Virginia. Candidate for Ed.D. (Auburn University).

**Calvin Allen Vance, Vehicle Maintenance**

Diploma, 1964 (Central Piedmont Community College).

**Thomas M. Vance, Fine Arts—Drama**

B.S., 1960, M.A., 1962 (Appalachian State University). Additional graduate work at University of North Carolina at Chapel Hill and University of Georgia.

**Hilda Varnell, Advancement Studies**

A.B., 1963 (Atlantic Christian College). Further study at University of North Carolina.

**Muriel A. Vollum, Instructional Systems Specialist**

B.A., 1949 (University of Minnesota); M.Ed., 1970, Ed.D., 1971 (North Carolina State University). Additional study at University of California at Berkeley.

**Ambrose R. Vulgan, Mathematics**

B.S., 1949 (Hampton-Sydney College); M.A., 1960 (Louisiana State University). Additional work at University of Richmond.

**Devenure Nivens Waddell, Communications**

A.B., 1968 (Johnson C. Smith University).

**Edward Francis Waechter, Sr., Assistant Director, Media Services**

Undergraduate work at University of Cincinnati, Xavier University and Ohio College of Applied Science.

**Margaret Fincher Wagoner, Secretarial Curricula**

B.S., 1961 (Appalachian State University); M.Ed., 1970 (University of North Carolina at Greensboro).

**John Charles Walker, Commercial Art**

B.F.A., 1965 (Kansas State College).

**Robert G. Wallace, Welding**

Diploma, 1963 (Central Piedmont Community College).

**Ronald Keith Walters, Chairman—Commercial Art**

B.F.A., 1956 (Maryland Institute of Art). Additional study at New York University, Ohio University and University of North Carolina at Charlotte.

**Richard C. Ward, Economics**

B.S., 1939 (Ohio University); M.A., 1966 (St. Mary's University, Texas).

**Patricia Anne Watson, Child Care Training Center**

Undergraduate study at Winthrop College.

**Eulada Paysour Watt, Counselor**

B.A., 1967 (Fisk University); M.Ed., 1970 (Columbia University Teachers College).

**Charlotte Hamor West, Secretarial Curricula**

B.A., 1946 (University of North Carolina at Chapel Hill). Additional study at Carolina Business College.

**Ralph W. Whitley, History**

A.B., 1965 (University of North Carolina at Chapel Hill); M.A., 1968 (Appalachian State University).

**James Harold Williams, Director, Auxiliary Services**

A.B., 1934 (University of North Carolina at Chapel Hill); M.A., 1953 (Appalachian State University). Additional graduate work at University of North Carolina at Chapel Hill.

- Sam S. Williams, Civil Engineering and Architectural Technology**  
B.S., 1935 (Carnegie-Mellon University); M.S., 1948 (Iowa State University). Additional work at Carnegie-Mellon University and Drury College. Registered Professional Engineer.
- C. Chrisman Wilson, Social Science**  
B.S., 1965 (Western Carolina University); M.S., 1968 (Radford College). Additional study at University of Tennessee.
- William Ray Wilson, Mathematics**  
B.S., 1959, M.Ed., 1965 (Georgia Southern College). Additional graduate work at Auburn University and North Carolina State University.
- Connie B. Wolfe, Associate Degree Nursing**  
B.S.N., 1967 (University of Nebraska). Additional study at University of North Carolina at Charlotte. Registered Nurse.
- J. Stephen Wright, Coordinator of Health Programs**  
B.S., 1965, M.S., 1967 (Clemson University); Ph.D., 1971 (Auburn University).
- Edison E. Yates, Bookstore Manager**  
A.B., 1937 (Mercer University). Additional study at Duke University.
- David A. Yonders, History and Political Science**  
A.B., 1950, M.Ed., 1952 (Ohio University). Additional study at Ohio State University and University of Tennessee.

**Credits:**

Format, Design, and Preparation for Printer;  
Marilyn J. Andresen, Instructor Commercial Art Department  
Central Piedmont Community College

**Graphics:**

Della Ann (Hoppi) Hurley, Graphics Specialist, Learning  
Resources Center, Central Piedmont  
Community College

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# JULY 1972 – JUNE 1973

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# JULY 1973 – JUNE 1974

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Elizabeth Avenue At  
North Kings Drive  
Post Office Box 4009  
Charlotte, N. C. 28204



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