THE
RICE INSTITUTE

HOUSTON, TEXAS

ANNOUNCEMENTS FOR THE ACADEMIC
YEAR BEGINNING SEPTEMBER FOURTEENTH
NINETEEN HUNDRED AND
THIRTY ONE

THE RICE INSTITUTE

A UNIVERSITY OF

LIBERAL AND TECHNICAL
LEARNING

FOUNDED IN THE CITY OF HOUSTON, TEXAS
BY WILLIAM MARSH RICE
AND DEDICATED BY HIM TO THE
ADVANCEMENT OF LETTERS,
SCIENCE AND ART

OPENED FOR THE RECEPTION OF
STUDENTS IN THE AUTUMN OF
NINETEEN HUNDRED
AND TWELVE

CALENDAR

1931

September 14–17 .	Entrance Examinations
September 17–18 .	Registration
September 21 . .	Opening of courses
September 23 . .	Matriculation address
November 26 . .	Thanksgiving Day
December 16–22 .	Preliminary Examinations for Freshmen and students on probation
December 22 . .	Beginning of Christmas holidays

1932

January 4 . . .	Resumption of courses
February 3–11 . .	February Examinations
February 22 . .	Washington's Birthday
March 2 . . .	Texas Independence Day
April 21. . . .	San Jacinto Day
May 9–14 . . .	Entrance Examinations
May 23–June 3 .	Final Examinations
June 4–6 . . .	Seventeenth Annual Commencement

THE RICE INSTITUTE

OFFICERS OF ADMINISTRATION

EDGAR ODELL LOVETT, PH.D., SC.D., LL.D.,
President

ROBERT GRANVILLE CALDWELL, PH.D., LITT.D.,
Dean

SAMUEL GLENN McCANN, M.A.,
Registrar

JOHN THOMAS McCANTS, M.A.,
Bursar

THE RICE INSTITUTE

THE NAME

THE new institution bears the name of the founder, the late William Marsh Rice. It aspires to university standing of the highest grade. Dedicated to the advancement of literature, science, and art, the educational programme of liberal and technical learning now being developed may justify the designation "Institute" as representing the functions of a teaching university and, at least in some of its departments, those of the more recent research institutions established in this country and abroad.

BRIEF HISTORICAL SKETCH

IT is now rather more than thirty years since several public-spirited citizens of the community asked Mr. Rice to bear the expense of building a new public high school for the city of Houston. This direct gift to the city's welfare Mr. Rice was unwilling to make, but a little later, taking into his confidence a half-dozen friends, he made known to them his desire to found a much larger educational enterprise for the permanent benefit of the city and state of his adoption. These gentlemen were organized into a Board of Trustees for the new foundation, which was incorporated in 1891 under a broad charter granting the trustees large freedom in the future organization of a non-political and non-sectarian institution to be dedicated to the advancement of letters, science, and art. As a

nucleus for an endowment fund, Mr. Rice at this time made over an interest-bearing note of two hundred thousand dollars to the original Board of Trustees, consisting of himself, Mr. James A. Baker, and the late Messrs. J. E. McAshan, E. Raphael, F. A. Rice, A. S. Richardson and C. Lombardi. Under the terms of the charter, the board is a self-perpetuating body of seven members elected for life: vacancies since its organization have been filled by the election of Messrs. William Marsh Rice, Jr., Benjamin Botts Rice, Edgar Odell Lovett, John Thaddeus Scott, Alexander Sessums Cleveland, and Edward Andrew Peden.

It was the unalterable will of the founder that the development of the work which he had conceived should progress no further during his lifetime. However, in the remaining days of his life he increased the endowment fund from time to time by transferring to the trustees the titles to certain of his properties, and in the end made the new foundation his residuary legatee. Upon the termination of the long years of litigation which followed Mr. Rice's death in 1900, the Board of Trustees found the Institute in possession of an estate whose present value is conservatively estimated at approximately ten million dollars, divided by the provisions of the founder's will into almost equal parts available for equipment and endowment respectively. It may be remarked in passing that it is the determined policy of the trustees to build and maintain the institution out of the income, thus preserving intact the principal not only of the endowment fund, but also that of the equipment fund. While proceeding to convert the non-productive properties of the estate into income-bearing investments, the trustees called Mr. Edgar Odell

Lovett, a professor in Princeton University, to assist them in developing the founder's far-reaching plans. Before taking up his residence in Houston, the future president visited the leading educational and scientific establishments of the world, returning in the summer of 1909 from a year's journey of study that extended from England to Japan. About this time negotiations were completed by which the Institute secured a campus of three hundred acres situated on the extension of Houston's main thoroughfare, three miles from the center of the city—a tract of ground universally regarded as the most appropriate within the vicinity of the city.

Another early decision of the trustees of the Institute was the determination that the new university should be housed in noble architecture worthy of the founder's high aims; and upon this idea they entered with no lower ambition than to establish on the campus of the Institute a group of buildings conspicuous alike for their beauty and for their utility, which should stand not only as a worthy monument to the founder's philanthropy, but also as a distinct contribution to the architecture of our country. With this end in view they determined to commit to Messrs. Cram, Goodhue, and Ferguson, of Boston and New York, the task of designing a general architectural plan to embody in the course of future years the realization of the educational programme which had been adopted for the Institute. Such a general plan, the work of Mr. Ralph Adams Cram, L.H.D., exhibiting in itself many attractive elements of the architecture of Italy, France, and Spain, was accepted by the board in the spring of 1910. Immediately thereafter plans and specifications for

an administration building were prepared, and in the following July the contract for its construction was awarded; three months later the erection of a mechanical laboratory and power-house was begun, and by the next autumn the construction of two wings of the first residential hall for men was well under way. In the preparation of preliminary plans for its initial building operations the Institute enjoyed the coöperation of an advisory committee consisting of Professor Ames, director of the physical laboratory of the Johns Hopkins University, at present President of the University; Professor Conklin, director of the biological laboratory of Princeton University; the late Professor Richards, chairman of the department of chemistry, Harvard University; and Professor Stratton, director of the National Bureau of Standards, at present Chairman of the Corporation of the Massachusetts Institute of Technology. In 1911, on the seventy-fifth anniversary of Texas Independence, the corner-stone of the administration building was laid by the trustees. This building, the mechanical laboratory of the engineering quadrangle, the power-house, and the first two wings of the first residential hall for men were ready for occupancy at the beginning of the first academic year in the fall of 1912. The third wing of this residential hall, begun in 1913, was first occupied by students in the autumn of 1914; while the construction of the physics laboratories and lecture amphitheater, begun also in 1913, was completed in the summer of 1914 from plans prepared by Messrs. Cram and Ferguson under the direction of Mr. H. A. Wilson, D.Sc., F.R.S., resident professor of physics in the Institute. In January, 1916, ground was broken for the first wing of the second residential group

for men; the construction of this wing was completed by September, 1916. Further building operations were suspended during the war. In the meantime the Athletic Field House and other structures of the exhibition field were completed in 1920. At the commencement exercises of 1923 ground was broken for the new laboratory for chemistry, the plans for which were prepared by Messrs. Cram and Ferguson and Mr. W. W. Watkin, associate architects, under the direction of Mr. H. B. Weiser, Ph.D., resident professor of chemistry in the Institute. The construction of this laboratory was completed during the academic year 1924–25.

The actual work of instruction of the first academic year began on the 23d day of September, 1912, the anniversary of the death of the founder. In the presence of the trustees of the Institute, members of the teaching staff, and representative citizens of the community, the first class of students was received in the faculty chamber of the administration building with appropriate ceremonies on September 26th. The scholastic work of the first academic year was limited to a single class of freshmen of a standard of preparation as high as the best public and private high schools were capable of attaining.

In the early autumn of 1912 an academic festival in observance of the formal opening of the Institute was held under altogether favorable conditions of weather, most generous coöperation of the community and commonwealth, and the heartening encouragement of several hundred scholars and scientists who came to Houston to assist in the launching of the new university. Chief among these distinguished representatives of life and learning were the

twelve foreign savants who had consented to participate in the inaugural programme by preparing series of lectures in the liberal humanities of philosophy, history, letters, and art, and in the fundamental sciences of mathematics, physics, chemistry, and biology. A complete account of the proceedings of the four days devoted to this celebration has been embodied in publications issued in commemoration of that occasion. In the latter appear in full the inaugural lectures of Professor Rafael Altamira y Crevea, of Madrid, Spain; Professor Emile Borel, of Paris, France; Senator Benedetto Croce, of Naples, Italy; Professor Hugo de Vries, of Amsterdam, Holland; the late Professor Sir Henry Jones, of Glasgow, Scotland; the late Privy Councilor Baron Dairoku Kikuchi, of Tokyo, Japan; Professor John William Mackail, of London, England; Privy Councilor Professor Wilhelm Ostwald, of Gross-Bothen, Germany; the late Professor Henri Poincaré, of Paris, France; the late Professor Sir William Ramsay, of London, England; Professor Senator Vito Volterra, of Rome, Italy; Professor Carl Størmer, of Christiania, Norway. In these commemorative volumes there appear also reproductions of responses from American and foreign universities and scientific societies to the invitation of the Institute; the addresses of Governor Colquitt, Chief Justice Brown of Texas, Bishop Gailor of Tennessee, the inaugural poem of Dr. Henry van Dyke of Princeton, and the dedicatory sermon by Dr. Charles F. Aked of San Francisco; together with the addresses delivered by the presidents or other official representatives of Amsterdam, Glasgow, London, Oviedo, Paris, Rome, Baylor, Chicago, Columbia, Lehigh, Princeton, Texas, Vanderbilt, and Virginia universities;

and a variety of other literary and artistic performances which are not easily classified in a brief résumé. More recently a special volume has appeared embodying the lectures and conferences delivered at the Institute on the occasion of visits to the Rice Institute from the British Educational Mission and the Official Mission of French Scholars to the Universities of the United States. In similar publications have appeared the lectures of the late Professor Sir Henry Jones, inaugurating the public lectureship on the Sharp Foundation, and under the same foundation the lectures of Dr. Terrot Reaveley Glover, Public Orator of Cambridge University; those of the late Honorable William Howard Taft, Chief Justice of the United States, the Right Honorable Sir Auckland Geddes, British Ambassador to the United States, and President A. Lawrence Lowell, of Harvard University, on the Godwin Lectureship in Public Affairs; those of Mr. John Powell, the American composer and pianist, inaugurating the recently endowed lectureship on music for which a friend of the Institute has anonymously made provision, and the lectures on the same foundation of Mademoiselle Nadia Boulanger of Paris, Sir Henry Hadow, Vice-Chancellor of the University of Sheffield, and MM. Maurice Ravel and A. Honegger of Paris; the Plymouth Tercentenary Lecture by the late Sir Arthur Shipley, of the University of Cambridge; a course of lectures by resident members of the Institute in observance of the six hundredth anniversary of the death of Dante; lectures on mathematics by Senator Vito Volterra, of the University of Rome, by Professor Jacques Hadamard, of the Collège de France, and by Professor Ch. J. de la Vallée Poussin, of the University of Louvain; on biology by Professor Edwin

Grant Conklin, of Princeton University, and by Professor Julian Huxley, of King's College, London; on astronomy by Professor Henry Norris Russell, of Princeton University; on chemistry by Professor Edward C. C. Baly, of the University of Liverpool; and addresses by the late Charles William Eliot, of Harvard University; Dean Frank Thilly, of Cornell University; President John Grier Hibben, of Princeton University; Provost Joseph Sweetman Ames of the Johns Hopkins University; Baron E. de Cartier de Marchienne, lately Belgian Ambassador to the United States; and Dr. John Huston Finley, Editor of the *New York Times*.

ANNOUNCEMENTS

THE FACULTY[1]

Virgil Charles Aldrich, B.A. (Ohio Wesleyan), Ph.D. (California), formerly Teaching Fellow in Philosophy at the University of California; Instructor in Philosophy.

Edgar Altenburg, Ph.D. (Columbia), formerly Assistant in Biology at Columbia University; later Instructor in Biology at the Rice Institute; Assistant Professor of Biology.

Stockton Axson, M.A. (Wesleyan), Litt.D. (Pittsburgh), L.H.D. (Wesleyan), LL.D. (Knox), formerly of the University of Vermont and of Adelphi College; later Professor of English Literature in Princeton University; Professor of English Literature.

Joseph Lloyd Battista, B.A. (Michigan), M.A. (Washington Univ. and Harvard), formerly Assistant Professor of Spanish and Italian at Washington University; Instructor in Spanish and Italian.

Leonard Mascot Blumenthal, B.S. in C.E. (Georgia School of Tech.), M.S. (Chicago), Ph.D. (Johns Hopkins), formerly Instructor in Mathematics at the University of Michigan and at the Johns Hopkins University; Instructor in Mathematics.

André Georges Bourgeois, Bachelier ẽs Lettres (Paris), Bachelier en Droit (Paris); Instructor in French.

Hubert Evelyn Bray, B.A. (Tufts), M.A. (Harvard), Ph.D. (Rice), formerly Instructor in Mathematics at Tufts College and at Lafayette College; Fellow in Mathematics and later Instructor in Mathematics at the Rice Institute; Assistant Professor of Mathematics.

[1] Arranged in alphabetical order, with last appointment before receiving academic appointment at this institution.

Charles Lowman Browne, B.S. (Kenyon), B. Arch. (Cornell), Instructor in Architectural Construction.

Frederic William Browne, Graduate of the School of Industrial Art of the Pennsylvania Museum, Philadelphia; Instructor in Architectural Drawing and Painting.

Andrew Bonnell Bryan, Ph.D. (Rice), formerly Fellow in Physics at the Rice Institute; Instructor in Physics.

Robert Granville Caldwell, B.A. (Wooster), Ph.D. (Princeton), Litt.D. (Wooster), formerly Fellow of Princeton University; Professor of Economics in the College of Wooster; later Assistant Professor of History at the Rice Institute; Professor of American History and Dean of the Institute.

Carroll Camden, Jr., Ph.D. (Iowa), formerly Instructor in English at the State University of Iowa; Instructor in English.

Lynn Marshall Case, Ph.D. (Pennsylvania), formerly Instructor in History at the University of Pennsylvania; Instructor in History.

Asa Crawford Chandler, B.A. (Cornell), Ph.D. (California), formerly Assistant Professor of Zoölogy and Physiology at Oregon Agricultural College; Instructor in Biology at the Rice Institute; later Research Associate of the School of Tropical Medicine, Calcutta, India; Professor of Biology.

James Chillman, Jr., M.S. in Arch. (Pennsylvania), F.A.A.R., M.A.I.A., formerly Alumni Fellow in Architecture at the University of Pennsylvania; Instructor in Freehand Drawing at the University of Pennsylvania; Instructor in Architecture at the Rice Institute; later Burnham Fellow in Architecture at the American Academy in Rome; Assistant Professor of Architecture.

Robert Rae Crookston, B.S. in M.E. (Carnegie Inst. Tech.), formerly with the Westinghouse Airbrake Company of Pittsburgh; Instructor in Mechanical Engineering.

Charles Hewitt Dix, B.S. (California Inst. Tech.), Ph.D. (Rice), formerly Fellow in Mathematics at the Rice Institute; Instructor in Mathematics.

Griffith Conrad Evans, Ph.D. (Harvard), formerly Instructor in Mathematics at Harvard University; Sheldon Fellow of Harvard University at the University of Rome; later Assistant Professor of Pure Mathematics at the Rice Institute; Professor of Pure Mathematics.

Lester R. Ford, B.A. (Missouri), Ph.D. (Harvard), formerly Lecturer in Mathematics at the University of Edinburgh; Sheldon Fellow of Harvard University at the University of Paris; later Instructor in Mathematics at Harvard University and Instructor in Life Insurance in the Graduate School of Business Administration of Harvard University; Assistant Professor of Mathematics.

Max Freund, Ph.D. (Leipsic), formerly Assistant Lecturer in the German Language and Literature at Liverpool University College; Royal Professor of German and Teutonic Philology in Queen's University of Belfast, Ireland, and Examiner in the Royal University of Ireland; later Professorial Lecturer in Modern English at the Universities of Giessen and Marburg, Germany; Professor of German.

Joseph Stephen Gallegly, Jr., M.A. (Rice); Instructor in English.

Allen Darnaby Garrison, Ph.D. (Rice), formerly Fellow in Chemistry at the Rice Institute under appointment of the National Research Council; later Instructor in Physical

Chemistry at the Rice Institute; Assistant Professor of Physical Chemistry.

Arthur J. Hartsook, M.S. (Mass. Inst. Tech.), formerly Instructor in Chemistry at the University of Nebraska; later Instructor in Industrial Chemistry at the Rice Institute; Assistant Professor of Chemical Engineering.

Claude William Heaps, B.S. (Northwestern), Ph.D. (Princeton), formerly Class of 1860 Experimental Science Fellow of Princeton University; Instructor in Physics at the University of Missouri; Instructor in Physics and later Assistant Professor of Physics at the Rice Institute; Professor of Physics.

Joseph William Hendren, M.A. (Princeton); Instructor in English.

Gilbert Leslie Hermance, B.S. (Oregon), M.A. (Columbia), formerly Instructor in Physical Education at the University of Oregon; Instructor in Physical Education.

Claude Edgar Hooten, B.S. in Arch. (Rice), M.A. (Rice), formerly Traveling Fellow in Architecture of the Rice Institute; Instructor in Architecture.

Herbert Kay Humphrey, B.S. in E.E. (Illinois), M.S. in E.E. (Union), E.E. (Illinois), formerly Assistant Consulting Engineer of the General Electric Company; Instructor in Electrical Engineering and later Assistant Professor of Electrical Engineering at the Rice Institute; Professor of Electrical Engineering.

Harvey Leroy Johnson, M.A. (Texas); Instructor in French.

Joseph Estil Jones, B.A. (Indiana), M.A. (Chicago); Instructor in Spanish.

Floyd Seyward Lear, B.A. (Rochester), M.A. and Ph.D.

(Harvard), formerly Instructor in History at Harvard University; later Instructor in History at the Rice Institute; Assistant Professor of History.

Edgar Odell Lovett, Ph.D. (Virginia and Leipsic), LL.D. (Drake, Tulane, and Baylor), Sc.D. (Colorado College), formerly Professor of Mathematics in Princeton University, and later Head of the Department of Astronomy in the same institution; Professor of Mathematics and President of the Institute.

Jarmon Alvis Lynch, B.A. (West Texas State Teachers), Ph.D. (Chicago), formerly Scholar at the University of Chicago; Instructor in Education.

Samuel Glenn McCann, Ph.B. (Wooster), M.A. (Rice), formerly Fellow in History at the Rice Institute; Instructor in Jurisprudence and Registrar of the Institute.

John Thomas McCants, M.A. (Virginia and Yale), formerly Scholar at the University of Virginia and University Fellow at Yale University; later Instructor in English at the Rice Institute; Instructor in Business Administration and Bursar of the Institute.

Alan Dugald McKillop, Ph.D. (Harvard), formerly Instructor in English at the University of Illinois; Instructor in English and later Assistant Professor of English at the Rice Institute; Professor of English.

Austin Mardon, M.A. (Trinity College, Cambridge), formerly Instructor in English History at Cornell University; Lecturer in English History.

Heinrich Meyer, Ph.D. (Freiburg); Instructor in German.

Walter Peter Miksch, M.A. (Stanford), formerly Instructor in French and Spanish at Reed College, and more

recently Assistant in French at Stanford University; Instructor in French.

John Marshall Miller, B.S. in E.E. (Kansas State Agricultural College), formerly with the Western Electric Company, Chicago, and later with the Southern California Edison Electric Company, Los Angeles; Instructor in Engineering Drawing.

Marcel Moraud, Agrégé de l'Université de France, formerly Instructor in French at the University of Minnesota and at Princeton University; later Associate Professor of French at the University of Toronto; Professor of French.

Lewis Morton Mott-Smith, Ph.D. (California Inst. Tech.), formerly Teaching Fellow at the California Institute of Technology; Instructor in Physics.

William Joseph Mulloy, M.A. (Vanderbilt), formerly Fellow in German at Vanderbilt University; Instructor in German.

Henry Oscar Nicholas, B.A. (Oberlin), Ph.D. (Yale), formerly Fellow and Assistant in Chemistry at Yale University; Instructor in Analytical Chemistry at Yale University; later Instructor in Analytical Chemistry at the Rice Institute; Instructor in Chemistry.

Eugene Jean Oberlé, M.A. (Stanford), formerly Instructor in Romanic Languages at the Leland Stanford Junior University; Instructor in French.

Frank Acklen Pattie, Jr., B.A. (Vanderbilt), M.A. (Harvard), Ph.D. (Princeton), formerly Fellow in Psychology, Gordon Macdonald Fellow, and Charlotte Elizabeth Procter Fellow of Princeton University, and Fellow of the National Research Council at Harvard University; Instructor in Psychology and Tutor in the Division of Philosophy at

Harvard University; later Instructor in Psychology at the Rice Institute; Assistant Professor of Psychology.

John Virgil Pennington, M.E. (Stevens), formerly Assistant Engineer, Public Service Corporation of New Jersey; Instructor in Mechanical Engineering.

Joseph Horace Pound, B.S. in M.E., and M.E. (Missouri), formerly Instructor in the School of the Westinghouse Machine Company; Instructor in Mechanical Engineering and later Assistant Professor of Mechanical Engineering at the Rice Institute; Professor of Mechanical Engineering.

George Holmes Richter, Ph.D. (Rice), formerly Assistant in Chemistry and later Fellow in Chemistry at the Rice Institute; more recently National Research Fellow at Cornell University; Instructor in Organic Chemistry.

William Monroe Rust, Jr., Ph.D. (Rice), formerly Fellow in Mathematics at the Rice Institute; Instructor in Mathematics.

Lewis Babcock Ryon, Jr., C.E. (Lehigh), formerly Instructor in Civil Engineering and later Assistant Professor of Civil Engineering at the Rice Institute; Professor of Civil Engineering.

Arthur Ferdinand Scott, B.S. (Colby), M.A. and Ph.D. (Harvard), formerly Assistant in Chemistry at Harvard University and later Sheldon Fellow of Harvard University; Assistant Professor of Chemistry at Reed College; Instructor in Analytical Chemistry.

Harry Alexander Scott, Ph.D. (Columbia), formerly Instructor in Physical Education at Columbia University, and Professor of Physical Education at the University of Oregon; Professor of Physical Education.

Lee M. Sharrar, B.A. (Alma), M.A. (Columbia), formerly Assistant Professor of Economics at Alma College; Instructor in Economics.

Fred Vernon Shelton, M.A. (Rice); Instructor in French.

Edwin Joe Shimek, B.S. in E.E. (Rice), M.S. (Mass. Inst. Tech.), formerly with the General Electric Company; Instructor in Electrical Engineering.

Verne Franklin Simons, M.A. (Kansas), formerly Instructor in Economics at the University of Kansas, and Assistant in Accounting at the University of Chicago; Instructor in Economics.

John Willis Slaughter, B.A. (Lombard), Ph.D. (Michigan), formerly Lecturer on Sociology in the School of Economics at the University of London; Lecturer in Civics and Philanthropy.

Morris Albion Stewart, B.S. (New Hampshire), Ph.D. (Cornell), formerly Instructor in Biology at the University of Rochester; Instructor in Biology.

William Taylor Thom, Jr., Ph.D. (Johns Hopkins), Associate Professor of Geology in Princeton University, on leave of absence; Walter B. Sharp Research Fellow.

Joseph David Thomas, M.A. (Chicago); Instructor in English.

Radoslav Andrea Tsanoff, B.A. (Oberlin), Ph.D. (Cornell), formerly Sage Fellow of Cornell University; Instructor in Philosophy at Clark University; later Assistant Professor of Philosophy at the Rice Institute; Professor of Philosophy.

Leo Vernon Uhrig, B.S. in C.E. (Missouri), formerly of the Engineering Department of the City of Detroit; Instructor in Civil Engineering.

James Stephen Waters, B.S. (Rice); Instructor in Engineering.

William Ward Watkin, B.S. in Arch. (Pennsylvania), M.A.I.A., formerly Scholar in Architecture in the University of Pennsylvania; Associate Architect with Messrs. Cram and Ferguson, the supervising architects of the Institute; Instructor in Architecture and later Assistant Professor of Architecture at the Rice Institute; Professor of Architecture.

Harry Boyer Weiser, M.A. (Ohio State), Ph.D. (Cornell), formerly Assistant Instructor in Chemistry at Cornell University; Assistant Professor of Chemistry in the University of Tennessee; Instructor in Chemistry and later Assistant Professor of Chemistry at the Rice Institute; Professor of Chemistry.

Hugh Clayton Welch, M.D. (Texas); Instructor in Biology.

Russell Eugene Westmeyer, Ph.D. (Iowa), formerly Assistant in Economics at the State University of Iowa; Instructor in Economics.

William Erickson White, B.S. in C.E. (Iowa State), formerly Research Assistant in Highway Engineering at Iowa State College; Instructor in Civil Engineering and later Assistant Professor of Civil Engineering at South Dakota State College; Instructor in Civil Engineering.

George Wesley Whiting, B.A. (West Virginia) M.A. (Harvard), Ph.D. (Chicago), formerly Assistant Professor of English at the Michigan State College, and Assistant in English at the University of Chicago; Instructor in English.

George Guion Williams, M.A. (Rice), formerly Assistant and later Instructor in English at the Rice Institute;

Teaching Fellow in English in New York University; Instructor in English.

Harold Albert Wilson, F.R.S., M.A. (Cambridge), M.Sc. (Victoria), D.Sc. (London), formerly 1851 Exhibition Scholar of Leeds University; Allen Scholar and Clerk Maxwell Student of Cambridge University; Scholar in Physics of London University; Fellow of Trinity College, Cambridge University; Professor of Physics in King's College, London; Professor of Physics in McGill University; Professor of Physics at the Rice Institute; later Professor of Natural Philosophy in the University of Glasgow; Professor of Physics.

William Gordon Zeeveld, B.A. (Rochester), M.A. (Johns Hopkins); Instructor in English.

ASSISTANTS AND FELLOWS

Henry Eugene Banta, M.A. (Rice); Fellow in Physics.

Tom Wilkerson Bonner, B.S. (Southern Methodist Univ.); Fellow in Physics.

Paul Livingstone Burlinghame, M.A. (California), formerly Assistant in Zoology at the University of California; Fellow in Biology.

Cyril Ellsworth Cockrell, B.S. (Rollins); Fellow in Chemistry.

Joseph Ilott Davies, M.A. (Rice); Assistant in Biology.

Alice Crowell Dean, M.A. (Rice); Fellow in Mathematics.

Carl Dodge, B.S. in E.E. (Rice); Graduate Assistant in Electrical Engineering.

Robert Charles Dosser, B.S. (Michigan State); Fellow in Chemistry.

George Alvin Garrett, B.A. (Mississippi); Fellow in Mathematics.

George Robert Gray, B.S. (Texas Christian); Fellow in Chemistry.

Sidon Harris, Jr., M.A. (Texas); Fellow in Physics.

Lee Hodges, B.S. (Harvard); Assistant in French and Spanish.

Wilson Mathis Hudson, M.A. (Texas); Assistant in English.

John Tom Hurt, B.A. (Rice); Fellow in Mathematics.

Gordon Lee Locher, B.A. (Park), M.A. (Rice), formerly Assistant Professor of Physics at Miami University; Fellow in Physics.

Sanders Lyles, M.A. (Rice); Fellow in Biology.

Donald Royce McKee, B.A. (Grinnell); Fellow in Mathematics.

Winfred O. Milligan, B.A. (Illinois College); Fellow in Chemistry.

Ferrin Bates Moreland, B.S. (Oregon State); Fellow in Chemistry.

Addison Stayton Nunn, B.S. in Arch. (Rice), formerly Assistant in Architecture at the Rice Institute; Fellow in Architecture.

Victor Martin Obenhaus, B.A. (Rice); Fellow in Chemistry.

Albert Martin Olsen, B.A. (Texas); Assistant in Spanish.

Luke Osburn, B.A. (Rice); Assistant in English.

Elton Felix Reid, Jr., B.A. (Rice); Fellow in Chemistry.

Vernon Truett Schuhardt, B.A. (Texas), M.A. (Rice); Fellow in Biology.

Robert William Talley, B.S. in Arch. (Rice); Fellow in Architecture.

SCHOLARSHIPS

WHILE seeking to develop its students in character, in culture, and in citizenship, the Rice Institute will reserve for scholarship its highest rewards and in particular for evidences of creative capacity in productive scholarship. To encourage this devotion to learning there have been devised through the donations of friends of the Institute a number of undergraduate scholarships to be awarded preferably to those students who have been in residence at the Institute for at least one year. Moreover, honorary scholarships without stipend may be granted to students whose scholastic standing shows marked ability.

THE GRAHAM BAKER STUDENTSHIP

The first of these undergraduate scholarships to be established at the Institute is the Graham Baker Studentship, founded by Captain and Mrs. James A. Baker, of Houston, in memory of their eldest son, the late Frank Graham Baker. This studentship is awarded annually to students of the Rice Institute upon the basis of highest standing in scholarship, and the holder is known as the Graham Baker Student for the year. The award is announced at the commencement convocation in June, and the annual stipend is $300.

THE HOHENTHAL SCHOLARSHIPS

The Hohenthal Scholarship Fund is a gift to the Rice Institute made through the good offices of Mr. William M. Rice, Jr., from the estate of the late Lionel Hohenthal,

of Houston, who in his last will and testament instructed his executor, Mr. Rice, to devote the residue of his estate to the founding of a permanent memorial to Mr. Hohenthal's mother, father, and brother. The scholarships provided by this fund are known as the Hohenthal Scholarships, and the holders as the Hohenthal Scholars of the Institute. These scholarships are awarded annually to students who are earning a substantial part of their college expenses on a basis of high standing in scholarship. Each of the six now available carries with it an annual stipend of $200.

Scholarships in Civics and Philanthropy

Scholarships in association with the Lectureship in Civics and Philanthropy have been provided during recent years by the late Will C. Hogg, and by Messrs. William L. Clayton, Ed Prather, and Harry C. Wiess, of Houston. These scholarships bear an annual stipend of $250 and are awarded preferably to graduates of high standing intending to prepare for work in social service.

The D.A.R. Scholarship

The John McKnitt Alexander Chapter of the Daughters of the American Revolution has provided an endowed undergraduate scholarship at the Rice Institute. Under the present conditions of this scholarship it is awarded to a young woman student on admission to the Institute and carries with it an annual stipend of $300. The first award was made for the academic year 1919–20.

The Ellen Axson Wilson Scholarship

The Axson Club, an organization of Houston Women in the interests of literary pursuits, recently concluded a successful campaign for the endowment of a permanent scholarship at the Rice Institute in memory of Ellen Axson Wilson (the late Mrs. Woodrow Wilson), the scholarship to be awarded from year to year to a young woman student of the Institute. The annual stipend of the Ellen Axson Wilson Scholarship is $600, and the first award of the scholarship was made for the academic year 1922–23.

The Elizabeth Baldwin Literary Society Scholarship

The Elizabeth Baldwin Literary Society of the Rice Institute is maintaining annually a scholarship with a view to providing permanent endowment therefor. This Scholarship is available to a student of the Rice Institute, either a young man or a young woman, the candidate to be chosen by the faculty on grounds of scholarship, personality, and physical vigor. The present annual stipend of the Elizabeth Baldwin Literary Society Scholarship is $300, and the first award of the scholarship was made for the academic year 1926–27.

The Pallas Athene Literary Society Scholarship

The Pallas Athene Literary Society of the Rice Institute is providing an annual scholarship at the Rice Institute, with the intention of raising a permanent endowment for the scholarship. This scholarship is open to a young woman student of the Rice Institute, to be selected by the faculty on grounds of scholarship, personality, and physical vigor. The present annual stipend of the Pallas Athene

Literary Society Scholarship is $300, and the first award of the scholarship was made for the academic year 1926–27.

The Daniel Ripley Scholarship

In memory of her husband, the late Daniel Ripley, for many years a prominent citizen of Houston, Mrs. Edith Ripley has established by the donation to the Institute of $10,000, the Daniel Ripley Scholarship. The annual income of this trust fund is to be awarded to that self-supporting young man or woman student completing the freshman year at the Rice Institute who receives the highest grades, and the candidate is to be selected by the faculty. The first award of the Daniel Ripley Scholarship was made for the academic year 1927–28.

The Junior Engineering Scholarship

To foster interest in engineering education at the Rice Institute and to provide for recognition for work well done, an anonymous donor is contributing to the Rice Institute the sum of $300 annually as a stipend for the Junior Engineering Scholarship, to be awarded to that male student in a regular engineering course of the junior year who has the highest scholastic standing in his courses taken that year. This scholarship is restricted to no particular field of engineering, the selection of the scholar is made by the faculty, and in making the selection account is taken of individual qualifications of character and personality, but no consideration is to be given to the financial circumstances of the student. The first award of the Junior Engineering Scholarship was made for the academic year 1928–29.

The Edith Ripley Scholarships

Mrs. Edith Ripley of Houston has established three Edith Ripley Scholarships by the donation of $10,000 to the Rice Institute, the income of which is to be distributed equally and annually to three young women students of the Institute to be selected by the faculty. In selecting the beneficiaries of this donation, consideration is to be given to the mental, moral, and womanly qualities of the candidates, as well as to their financial necessities. The first awards of the three Edith Ripley Scholarships were made for the academic year 1928–29.

The Mary Parker Gieseke Scholarship

Mr. Fred A. Gieseke of Houston and his daughter, Miss Frances Sara Gieseke, a graduate of the Rice Institute, have established the Mary Parker Gieseke Scholarship in memory of the late Mrs. Fred A. Gieseke, by a gift to the Rice Institute of $5000. This new memorial scholarship is to be awarded annually for high standing in scholarship to a student of the Rice Institute who has been in residence at least one year. The annual stipend of the scholarship is $300. The first award of the Mary Parker Gieseke Scholarship was made for the academic year 1929–30.

The Thomas Aubrey Dickson and Pauline Martin Dickson Scholarships

The late Mrs. Pauline Martin Dickson, of Houston, in execution of the wishes of herself and her husband, the late Dr. Thomas Aubrey Dickson, has bequeathed to the San Jacinto Trust Company a sum of $10,000, the income of

which is to be paid semi-annually to the Rice Institute for the support of scholarships to be known as the Thomas Aubrey Dickson and the Pauline Martin Dickson Scholarships, to be awarded by the faculty, on the basis of scholarship, to self-supporting students of the Institute, young men or young women. The first awards of the Dickson Scholarships will be available for the academic year 1932–33.

The Traveling Scholarship in Architecture

Provision for a Rice Institute Traveling Scholarship in Architecture has been made by the following gentlemen: Messrs. W. L. Clayton, George S. Cohen, Alfred C. Finn, Wyatt G. Hedrick, F. A. Heitmann, E. L. Neville, Cleveland Sewall, and William Ward Watkin, who have individually pledged the amount of $150 each year for five years to a stipend of $1200 to be given each year to a student in architecture for the purposes of European travel and study. The selection of the holder of the Traveling Scholarship is to be made by the faculty of the Department of Architecture by means of a formal competition arranged each year for such purpose by the faculty and in which students or graduates of the Rice Institute are eligible to participate. The first award of the Traveling Scholarship in Architecture was made for the academic year 1928–29.

The Lady Geddes Prize in Writing

The Right Honorable Sir Auckland Geddes, British Ambassador to the United States, Godwin Lecturer of the Rice Institute in 1921, has endowed at Rice a prize in writing, which is to bear the name of Lady Geddes. This

prize is to be awarded annually from the income of the endowment of one thousand dollars.

The first award of the Lady Geddes Prize in Writing was made at the end of the academic year 1922–23, the competition of this award being open to members of the freshman and sophomore classes of the Rice Institute, and the subjects assigned pertaining to the relations between Great Britain and the United States.

The Sara Stratford Fund

The Sara Stratford Fund for Women Students of the Rice Institute, in memory of the late Mrs. Sara Stratford, first Adviser to Women, who served faithfully and efficiently in that capacity from the opening of the Institute, is being established by her daughter, Mrs. William Bradshaw Torrens, her immediate successor as Adviser to Women. For the present one hundred dollars per year will be available at the time of registration in September, for laboratory or other fees of courses, science courses in particular, which the candidates, selected by the Committee on Examinations and Standing, could not otherwise afford to take. The first awards from the Sara Stratford Fund will be made in the autumn of 1931.

The Mary Alice Elliott Loan Fund

In memory of their daughter, the late Mary Alice Elliott, who at the time of her death was a student in architecture at the Rice Institute in the class attaining, at the graduation of 1931, the degree of bachelor of science in architecture, Mr. and Mrs. Card G. Elliott of Houston are establishing the Mary Alice Elliott Loan Fund for Foreign Travel and

Study in Architecture, in the amount of $2500. A loan of $500 from this fund is to be available each year, on recommendation of the faculty in architecture, to an architectural graduate who has received honorable mention in the annual competition for the regular Traveling Scholarship already established. The first award from the Mary Alice Elliott Loan Fund has been made for the academic year 1931–32.

The Raymond R. Stone Mechanical Engineering Fund

In memory of their son, the late Raymond Ruser Stone, a mechanical engineering graduate of the Rice Institute in the Class of 1930, Mr. and Mrs. Jesse R. Stone, of Houston, are making provision for an annual award of one hundred dollars to that student of mechanical engineering who has at the end of his sophomore year shown the most interest and ability in kinematics and related subjects, the selection to be made by the mechanical engineering faculty and to be contingent on the financial needs of the student and on his continuing his work into the junior year in engineering at the Rice Institute. The first assignment of the Raymond R. Stone Award in Mechanical Engineering has been made for the academic year 1931–32.

The Robert Pilcher Quin Award

By a group of student friends of the late Robert Pilcher Quin, a member of the Class of 1933, provision is being made for an annual "Bob Quin Award" in the form of a medal, for qualities in athletics, leadership, scholarship, and sportsmanship in which he himself excelled. The first of these medals was awarded for the academic year 1930–31.

FELLOWSHIPS

THE Rice Institute seeks to interpret in a large way its dedication to the advancement of letters, science, and art. It not only looks to the employment of these disciplines in the development of the life of the individual and in that of the race, but it would also play its part in the progress and enlargement of human knowledge by contributions of its own resident professors and scholars. Accordingly there have always been associated with the staff of the Institute advanced students in training for careers both as teachers and researchers: with this end in view, graduate fellowships have been awarded from time to time to degree-bearing students of the Institute and other educational foundations.

THE WALTER B. SHARP MEMORIAL FUND FOR RESEARCH IN PURE AND APPLIED SCIENCE

In memory of her husband, the late Walter B. Sharp, one of the earliest and most successful of the pioneers in the development of the petroleum industry in this country, Mrs. Estelle B. Sharp of Houston has endowed at the Rice Institute the Walter B. Sharp Memorial Fund for Research in Pure and Applied Science. The income from this fund is to be used for the maintenance of resident or traveling fellowships in scientific research, preference to be given geological research, the production of petroleum and the products closely allied thereto. A requisite for eligibility to these fellowships is the degree of doctor of philosophy, or similar standing in this or other institutions. The awards are to be known as the Walter B. Sharp Fellowships, and the holders thereof as the Walter B. Sharp Fellows of the

Rice Institute. The first Walter B. Sharp Fellow, at a stipend of $2500, has been appointed for the academic year 1931–32.

THE PHI BETA KAPPA SOCIETY

THE Senate of the United Chapters of Phi Beta Kappa at its meeting in December 1927, voted to recommend the establishment of a chapter at the Rice Institute, and at a meeting of the National Council held in September 1928, the institution of the Rice, or Beta of Texas, Chapter was duly authorized. The chapter was formally installed on March 1, 1929, by the Secretary of the United Chapters.

OPPORTUNITIES FOR SELF-HELP

IN addition to the stipends of fellowships and endowed scholarships, there are, on the campus and in the city, opportunities in considerable variety for worthy and deserving students to earn a part of their living expenses while attending the Institute. Information concerning such openings may be obtained from the Bursar. Thanks also to the generosity of a number of citizens of Houston, there are available several student loan funds. Inquiries concerning the administration of these funds should be addressed to the Bursar.

THE RICHARDSON FUND FOR RICE STUDENTS

Mrs. Libbie A. Richardson, wife of the late Alfred S. Richardson, who was a charter member of the Board of Trustees of the Rice Institute, bequeathed in trust to the Houston Land and Trust Company as trustee, approximately $51,000 to constitute the Richardson Fund, the

income therefrom to be used in educating necessitous young men and women at the Rice Institute. The present annual income of the Richardson Fund is about $2600. Inquiries concerning the administration of this fund may be addressed to the Bursar.

The Grant William Jordan and Cora Jordan Memorial Fund

Under the will of the late Mrs. Cora Jordan, a resident of Houston, the bulk of her estate was left in trust with the Houston Land and Trust Company as trustee, the income therefrom to be used in assisting worthy young men and women in obtaining an education at the Rice Institute. The Jordan Memorial Fund amounts at present to approximately $56,000 and the net annual income therefrom is about $3000. The beneficiaries under the Jordan Fund have been appointed for the academic year 1930–31.

GENERAL REQUIREMENTS FOR ADMISSION

All candidates for admission to the Institute are required to present satisfactory testimonials as to their character, and either to pass examinations in the entrance subjects, or, in lieu thereof, to present certificate of graduation from an approved public or private high school. The standard requirements for matriculation are determined by the system of units given below. A unit represents a course of study pursued five hours a week for an academic year. Appropriate application forms may be secured from the Registrar.

Fifteen units are required for entrance in full standing to the Freshman Class of the Institute. No candidate for

admission will be accepted with fewer than fifteen units. And towards this total of fifteen units, every candidate will be required to present, from the lists of subjects printed below, at least three units in English, three units in mathematics,[1] two in algebra and one in plane geometry, two units in history, and three units in one foreign language or two units in each of two foreign languages. Variation in the distribution of units may be considered in individual cases.

METHOD OF PROCEDURE FOR ADMISSION

I. General Policy of Competitive Admission of Students

With the rapid growth in population of Houston and the Southwest, accompanied by an even more rapid increase in the demand for college training, the Rice Institute is brought face to face with the problem of maintaining high standards of instruction without shutting the door of opportunity to properly qualified students. It is therefore proposed, for the immediate future, to meet this problem by a plan of admission based on the following principles:

1. The maintenance, as in the past, of standards for entrance on a high plane.
2. The adoption in advance for each academic year or group of years of a specific number of new students to be admitted on a competitive basis. This number should be slightly smaller than the demand but not so far below that demand as to cause injustice to well qualified students.

[1] Students expecting to enter the Institute are advised to elect mathematics during their fourth year. If possible, this course should include training in algebra and trigonometry.

3. The division of students into still smaller groups, especially in the classes in elementary subjects. The adoption of this principle makes necessary the acceptance of a smaller total number, but means that a larger number will receive careful and adequate instruction.

II. Specific Plan for the Admission of Four Hundred New Students in the Autumn of 1931

The Rice Institute will accept four hundred new students in September, 1931. The total student body will thus consist of about thirteen hundred members, which was approximately the enrollment in September, 1930.

In selecting the members of the Freshman Class the Committee will be guided by such principles as the following:

1. As at present, no candidate to be accepted with fewer than fifteen units.
2. Preference to be given to candidates who present the maximum number of units in English, Mathematics, Foreign Languages, Science, and History.
3. Preference to be given to candidates who show special promise and capacity for leadership, especially those in the upper half of their high school class.
4. Of candidates not in one of the above preferential groups, special preference to be given to those who prove fitness by taking entrance examinations in one or more subjects.
5. Preference to be given to candidates whose applications are received early.
6. Candidates, once chosen, are received without conditions.

LIST OF SUBJECTS WITH VALUES IN UNITS

BOTANY 1; Chemistry 1; Civics (½ or 1); English (3 or 4); French (Elementary 2, Intermediate 1, Advanced 1); German (Elementary 2, Intermediate 1); Greek (Grammar and Elementary Prose Composition 1, Xenophon 1, Homer—*Iliad*, Books I–III 1); History (Ancient 1, Mediæval and Modern 1, English 1, American 1); Latin (Grammar, Elementary Prose Composition and Cæsar 2, Cicero 1, Virgil 1); Mathematics (Algebra 2, Plane Geometry 1, Solid Geometry ½, Trigonometry ½); Spanish (Elementary 2, Intermediate 1, Advanced 1); Physics 1; Physical Geography ½; Physiology ½; General Science 1; Zoölogy 1. Substitutes for certain of these subjects may be considered in individual cases.

Entrance examinations will be held at the Institute beginning September 14, 1931, and again during the week beginning May 9, 1932. Applications for the privilege of taking these examinations must be received at the Registrar's Office three weeks in advance of the beginning of the examinations. Such applications must be accompanied by statements and records from schools attended by candidates. Appropriate forms for such applications and records may be obtained from the Registrar's Office of the Rice Institute on request.

The terms of admission to the Institute are based on the recommendations of the Carnegie Foundation for the Advancement of Teaching as expressed in the Documents of the College Entrance Examination Board. Complete information with respect to further details of these re-

quirements will be forwarded by the Institute to any candidate upon receipt of a request addressed to the Registrar of the Institute.

Advanced credit will be granted to students coming from other recognized colleges and universities only when the work presented is equivalent in content and quality to a full year course at the Institute. Such prospective students should make early application to the Registrar and submit official statements of their preparatory and college work, together with catalogues of the institutions attended.

EXPENSES

THE opportunities for study and research offered by the Rice Institute are open without tuition both to young men and to young women. Students, of course, are expected to meet all expenses incurred in the purchase of text books, drafting instruments, note books, examination papers, certificates and diplomas, and the materials actually used up in the experimental courses in pure and applied science. An annual registration fee of ten dollars is required of all students. A fee of sixteen dollars is required at registration time of all male Freshmen, for the use of physical training equipment during his residence; for details see page 98. An annual medical fee of five dollars is required of all students living in the Residential Halls. A contingent deposit of ten dollars, payable at registration, must be maintained by each student. In addition to this general contingent deposit, laboratory deposits also payable at registration must be maintained at the Office of the Bursar as follows: a deposit of twenty-five dollars for each course taken in biology, chemistry, and physics; a deposit of twenty-five dollars for

the junior and senior courses in civil, electrical, and mechanical engineering; and a deposit of twenty-five dollars for the courses of each year in architecture.

These deposits, contingent and laboratory, will ordinarily cover the charges against the student for materials, et cetera, but in the event these charges against any particular deposit should approach the amount of that deposit, the student will be required to make such additional payment as will bring his deposit to the original amount: this is what is meant by maintaining a deposit. Any balances on these deposits are returned in July following the academic year. For delayed registration a penalty is required. See page 98 for expenses in connection with physical training.

No student in arrears in his bills to the Institute will be admitted to any of the examinations.

At the time of registration a fee of eighteen dollars is assessed each student by the Students' Association to meet the expenses of the Students' Association, the Honor Council, and the student publications. This assessment is made with the approval of the Faculty and the Board of Trustees, but the payment of the fee is not compulsory. However, students who thus become members of the Students' Association are entitled to admission to all athletic contests of Rice Institute teams held in Houston, and they receive the weekly paper and the college annual.

Rooms in the residential halls for men, completely furnished exclusive of linen, may be had at prices ranging from eighty to one hundred and twenty-five dollars per year, five-eighths of the rental being paid when the lease is signed and the remainder paid in February. As the charge for

table board will be made at actual cost, the monthly price, payable in advance, will probably vary during the year. Until October first, a blanket charge of one dollar and five cents per day will be made.

These residential halls are of absolutely fireproof construction, heated by steam, lighted by electricity, cleaned by vacuum apparatus, and equipped with the most approved form of sanitary plumbing, providing adequate bathing facilities on every floor. The rooms will be let in the order of applications received. Inasmuch as each year the accommodations now adequate to house some three hundred and fifty men have all been engaged before the opening of the session, reservations should be made early. Diagrams showing the floor plans will be sent to anyone who may be interested on application to the Office of the Bursar.

Accommodations for the residence of young women on the university grounds are not available at present. However, while attending to their duties on the campus the young women of the university have access to adequate rest rooms, tennis courts, and other forms of recreation under the constant supervision of Mrs. William Bradshaw Torrens, Adviser to Women. Information concerning desirable places of residence for young women students may be had at the Office of the Bursar.

COURSES OF INSTRUCTION FOR DEGREES

ALTHOUGH it is the policy of the institution to develop its university programme rather more seriously from the science end, there are also being provided facilities for elementary and advanced courses in the so-called humani-

ties, thereby enabling the Institute to offer both the advantages of a liberal general education and those of special and professional training. Extensive general courses in the various domains of scientific knowledge will be available, but in the main the programme consists of subjects carefully coordinated and calling for considerable concentration of study. These programmes have been so arranged as to offer a variety of courses in arts, in science, in letters, and in their applications to the several fields of engineering, architecture, and other regions of applied science, leading after four years of undergraduate work to the degree of Bachelor of Arts. Degrees will also be offered in architecture and in chemical, civil, electrical, and mechanical engineering. Furthermore, for the degrees of Master of Arts, Doctor of Philosophy, and Doctor of Engineering, every facility will be afforded properly qualified graduate students to undertaken lines of study and research under the direction of the Institute's resident and visiting professors.

The academic programmes of study leading to the degree of Bachelor of Arts after four years of study are of a common type for the first two years, but for the third and fourth years are differentiated into two forms: first, general courses leading to the degree of Bachelor of Arts, either with some grade of distinction or without special mention, and, second, honours courses leading to the degree with honours in certain subjects. These are types that will be referred to in the sequel as general courses and honours courses respectively.

The general course leading to the degree of B.A. has been arranged to give thorough training to those students

who are seeking university instruction in literary and scientific subjects either as a part of a liberal education or as preliminary to entering upon a business or professional career. The general course therefor involves the study of several subjects up to a high university standard but does not include a highly detailed specialized study of any one subject such as is necessary before research work or university teaching can be profitably undertaken. Students wishing to specialize with a view to research work and university teaching may either complete an honours B.A. course and then proceed by graduate study to the degrees of M.A. and Ph.D., or they may first take a general B.A. course and after completing it proceed by graduate study to the higher degrees.

The attention of students intending to enter the profession of engineering or architecture is called to the great advantages in first taking a general or honours academic course before beginning special study in engineering or architecture. At present the Institute is not offering courses leading to degrees in law and medicine, but students looking forward to such careers will find in the earlier years of the B.A. course all the requirements for admission to many medical and law schools, provided suitable subjects are chosen. However, attention is called to the fact that several professional schools of law and medicine now require bachelor degrees for admission.

As has already been intimated, the course for the degree of B.A. extends over four years. During the first two years a considerable part of the work is prescribed, while

during the last two years each student is allowed, within certain restrictions to select the subjects he studies. In the majority of the courses the formal instruction offered consists of three lectures a week together with laboratory work in certain subjects. Preliminary examinations for Freshmen and students on probation are held in December, examinations for all students are given in February and final examinations for all are held in June. Other examinations are given from time to time at periods determined by the instructors.

These examinations are conducted under a student honor system. In determining the standing of a student in each class both his work during the term and the record of his examinations are taken into account.

Of subjects included in the B.A. courses the following are now available:

Group A	Group B
1. English	1. Pure Mathematics
2. French	2. Applied Mathematics
3. German	3. Physics
4. Italian	4. Chemistry
5. Latin	5. Biology
6. Spanish	6. Psychology
7. Economics	7. Chemical Engineering
8. Education	8. Civil Engineering
9. History	9. Electrical Engineering
10. Philosophy	10. Mechanical Engineering
11. Architecture	

Candidates for the degree of Bachelor of Arts of the Rice Institute will be required to select studies from the preceding groups according to the yearly programmes exhibited below.

First Year

(1) Pure mathematics
(2) English
(3) A modern language
(4) A science
(5) One other subject

Second Year

(1) Pure mathematics or a science
(2) English
(3) A modern language[1]
(4–5) Two other subjects.

At the beginning of the third year students may elect to take either a general course or an honours course.

Third Year General B.A. Course

Four subjects, of which two must have been taken in the second year and one in both first and second. At least one subject from each of the groups A and B must be taken. Students will receive advice in the selection of their subjects.

Fourth Year General B.A. Course

Four subjects, two of which must have been taken in the third year and one in both second and third or in first

[1] Students who enter with credit in two modern languages may substitute another subject for (3) in the second year; on the other hand, students must take at least one second year language course for graduation.

and third. At least one subject from each of the groups A and B must be taken. However, students will be allowed to specialize in their fourth year, provided they substitute an advanced course for the required group A or group B subject.

A student who wishes to become a candidate for a general B.A. degree should report his candidacy in writing at the beginning of the year in which he expects to take his degree.

To students who have completed a general four years' course the B.A. degree will be awarded either with some grade of distinction or without special mention.

HONOURS COURSES

The third and fourth year honours courses are intended for students who wish to specialize in particular branches of knowledge with a view to research work or teaching or later professional studies.

It is suggested that students who wish to prepare themselves for scientific careers in physics, chemistry, mathematics, or the scientific developments of engineering, enroll themselves for honours in physical sciences, in which a course in mathematics, physics, and chemistry is taken every year. The courses that form an essential part of the programme are the following: Mathematics 210, 220, 310; Physics 200, and two from among courses, 300, 310, 320, 330; Chemistry 220, 300, 310. Besides these, one or two other advanced courses may be chosen in fields in which the student is especially interested. The programme is further supplemented by systematic reading and thesis work.

In view of these special objects the requirements in such courses will be more severe than in the general courses in the same subjects. For this reason it is recommended

that students exercise due caution and seek advice before electing to take an honours course. Only those students who have shown in their first and second years that they are especially well qualified will be permitted to take an honours course. A student proposing to take an honours course must satisfy the department concerned that he is qualified to proceed with the study of that subject. He will be required to take the lectures and practical work provided for honours students in that subject during each of the two years and in addition certain courses in allied subjects. It is a decided advantage for students in honours courses to have had some preparation in French or German before entering college.

In 1931–32 honours courses will be available as follows:

(1) Pure and applied mathematics
(2) Theoretical and experimental physics
(3) Physical sciences
(4) Modern languages and literatures
(5) Biology
(6) Chemistry
(7) Economics and mathematics
(8) English
(9) History
(10) Philosophy

The following programme of honours courses in physics may be taken as typical of such courses:

Third year, four subjects: (1) mathematics, (2) and (3) Physics 300 and 320, or 310 and 330, (4) one other subject.

Fourth year, four subjects: (1) mathematics, (2) and (3) Physics 300 and 320, or 310 and 330, (4) one other subject.

A student who wishes to become a candidate for a degree with honours should report his candidacy at the beginning of his third year and renew his application at the beginning of his fourth year.

The degree of B.A. with honours will be awarded at the end of the fourth year to students who have completed an honours course. Candidates for honours who fail may be excused such part of a general course as may be equivalent to the work they have done. Candidates for honours who are not making satisfactory progress may be required to discontinue their honours course and may be excused such part of a general course as may be equivalent to the work they have done.

For courses leading to the degree of Bachelor of Science, see pages 101-116.

A student who has completed a general or an honours course for the B.A. degree may obtain the Master of Arts degree after the successful completion of one year of graduate work.

A candidate for the M.A. degree must elect a principal subject, and submit his schedule in writing when he reports his candidacy. Such schedule must represent the equivalent of four advanced courses to be passed with high credit. The work shall consist of (*a*) personal investigation, the results of which must be submitted as a thesis, and (*b*) at least two advanced courses of lectures, one of which must be a graduate course in the principal subject.

For courses leading to the degree of Master of Science, see page 101.

A student who has completed a course for the B.A. degree may be admitted as a candidate for the degree of

Doctor of Philosophy. In addition to high attainment, preparation for the Ph.D. degree involves usually at least three years of graduate work. Candidates for the degree must submit a thesis and pass a public examination. The thesis must present a distinctly original contribution to the subject. It must be published in an accredited journal or series, and fifty printed copies must be deposited in the Institute Library.

Candidates who successfully complete the first four years of the engineering course will receive the degree of Bachelor of Science in a specified branch of engineering. This degree will be awarded with distinction to students whose work is of a high standard. Candidates who successfully complete the five years' engineering course will receive the degree of Ch.E., C.E., E.E., or M.E. according to the branch of engineering taken. Under requirements conforming to those for the M.A. degree, namely, high standing and a thesis, the M.S. degree in a specified branch of engineering may be awarded.

Candidates who successfully complete the five years' course in architecture will be awarded the degree of Bachelor of Science in Architecture. Students in architecture who satisfy all the requirements for the degree of M.A. may elect to take that degree if they prefer.

STANDING IN SCHOLARSHIP OF UNDERGRADUATE STUDENTS

SCHEDULE of Undergraduate Students.—The regular schedule of undergraduate students is five courses in the Freshman year, five courses in the Sophomore year, four courses

in the Junior year, and four courses in the Senior year. The regular schedules for students of Engineering and Architecture may be found in these Announcements beginning on pages 101 and 116 respectively. Admission to less than the regular schedule is rarely granted, and then only in the most exceptional circumstances. One extra course may be taken in the second year and one in the third year by students who are not on probation. Deficiencies of the first two years must be removed before the year in which a student is a candidate for a degree, and may not be removed by extra courses in that year. An excess schedule must be reduced if a student fails to attain a grade of III or better in three courses, or if he fails to pass any course without at the same time doing work of exceptional quality in his other courses. No credit is given toward graduation for less than a full year's course in any subject, but a course which has been dropped by permission after the February examinations and in which a student's standing is satisfactory may be carried to completion in a succeeding year. Summer school courses will be accepted to remove not more than one Freshman or Sophomore deficiency. To remove a college deficiency no credit will be given for a course unless it is the equivalent in content and quality of a full year course at the Institute.

Examinations.—All courses at the Rice Institute are year courses. Preliminary examinations are given to Freshmen and students on probation in December. Regular written examinations are given to all students in February and at the close of the academic year in June. In Junior and Senior courses (listed as 300 or 400 courses) the June

examinations cover the work of the whole year. In elementary courses (listed as 100 or 200 courses) examinations cover the work done from the time of the preceding examination.

Dropping of Students for Deficiencies in Scholarship.—A student will be required to withdraw from the Institute if he fails in as much as one-half of the work of his schedule. He will also be dropped for failure to come off probation within one year, or for poor scholarship due to absences from the exercises of his schedule. Any student who withdraws from the Institute within five weeks of the beginning of any regular examination period on account of failure in his courses will be regarded as dropped from the Institute.

A student dropped from the Institute is not entitled to readmission. Exceptions may be made and a student granted readmission on presentation of satisfactory evidence that previous deficiencies have been removed. Dropped students, when allowed to return, are received only on probation. Students who have been dropped twice are not entitled to readmission.

Probation.—A student who is carrying five courses will be placed on probation if among his grades for the term there are two V's[1] or no grade better than IV. A student who is carrying four courses will be placed on probation if he has one V and one other grade below III, or has failed to obtain a grade of III or better in at least one course. A student with fewer than four courses will be placed on probation if he has one V, or if he does not obtain at least two grades of III or better. Probation is terminated only

[1]The symbols have the following meanings: I Very high standing, II High standing, III Medium standing, IV Low standing, V Failure.

at regular examination periods and must be terminated within one year's time or the student will be dropped from the Institute. A student who is on probation may also be dropped at any time during the probation period for inattention to the requirements of his schedule. A student who is on probation is not permitted to hold any elective office, or to serve as editor, assistant editor, business manager, or assistant business manager of a college publication.

Promotion.—To attain Sophomore standing, a student must have obtained in four of the five courses of the Freshman year, passing grades of which two must have been III or better. To attain Junior standing, a student must have obtained in at least nine of the ten courses of the Freshman and Sophomore years, passing grades of which four must have been III or better. To attain Senior standing, a student must have obtained passing grades, of which six must have been III or better, in at least thirteen courses of the five courses of the Freshman year, the five courses of the Sophomore year, and the four courses of the Junior year, required for full Senior standing. To obtain the degree of Bachelor of Arts, a student must have obtained passing grades, of which eight must have been III or better, in five Freshman courses, five Sophomore courses, four Junior courses, and four Senior courses, required for the first degree. Attention is called to the fact that this four years' course is built up by years. Accordingly four courses of the Freshman and Sophomore years respectively will not be credited as the equivalent of four courses of the Junior and Senior years respectively, a higher standard and wider range of collateral work being required of Juniors

and Seniors who elect in either of those years an elementary subject of the Freshman and Sophomore years.

No student shall attain Sophomore, Junior, or Senior standing in Engineering and Architecture who lacks more than one course of the standard schedule required for full standing in those years.

SUBJECTS OF INSTRUCTION FOR 1931–32

Of the courses to be offered during the scholastic year 1931–32 it is possible to announce those described below. The numbers designating the courses have the following signification: courses whose numbers begin with 1 are open to all students of the Institute; courses whose numbers commence with 2 are open to Sophomores, Juniors, and Seniors; those beginning with 3 are open to Juniors and Seniors; those beginning with 4 are Senior courses. Unless otherwise indicated, all courses consist of at least three exercises a week. For each course the days of the week and the hours have been indicated.

English 100. The theory and practice of English composition, and the study of fundamental literary forms. Required of Freshmen. The primary purpose of the course is to give students the command of written English which is necessary for later work in college. A secondary but still important purpose is to examine the chief types of prose and poetry, as a foundation for further courses in literature or for private reading.

M W F 8:00, 9:00, 11:00 or 12:00 or
T Th S 8:00, 9:00, 10:00, 11:00 or 12:00

ENGLISH 200. Outlines of the history of English literature, with collateral reading of authors representative of the various periods. M W F 10:00

ENGLISH 210. Argumentation and Public Speaking. Practical training in the fundamentals of effective speech, written argument, and debate. Designed to prepare the student for the ordinary demands of business life. Platform speaking, themes, conferences. This course is planned primarily for students of Physical Education.
T Th S 8:00

ENGLISH 300. A study of the English Drama, exclusive of Shakespeare, from its beginnings in the Middle Ages to the time of Goldsmith and Sheridan. T Th S 12:00

ENGLISH 320. Exposition and Argumentation. The study of contemporary problems in society and government as they appear in the expository essay, and later of the principles of argument and debate, the collection and weighing of evidence, fallacies, refutations. Themes, briefs, conferences. (Not offered 1931–32.)

ENGLISH 330. Advanced Writing. Themes and conferences. Emphasis will be laid on such types as the informal essay and the short story. This course is intended for students who have already shown some aptitude in writing.
T Th S 12:00

ENGLISH 340. The English Novel, with especial reference to the chief novelists of the eighteenth and nineteenth centuries. M W F 12:00

ENGLISH 350. A study of Greek and Latin literature in the best available translations. Considerable emphasis will be laid on the debt of modern civilization and literature to classical antiquity. M W F 12:00

ENGLISH 360. The Romantic Movement in the Eighteenth Century. The origin and development of English Romanticism through the following channels: Deistic philosophy; nature; melancholy; interest in the common man; the Norse, Celtic, and mediaeval revivals. The chief figures studied will be Thomson, Gray, Chatterton, Cowper, Burns, Crabbe, and Blake. T Th S 11:00

ENGLISH 370. John Milton: a study of his poetry and prose. T Th S 8:00

ENGLISH 380. The Poetry of the English Renaissance. The course will begin with early Humanism in England and will trace the development of poetry into the seventeenth century. Special attention will be given to the history of the sonnet, and to the work of Spenser. Hours to be arranged.

ENGLISH 390. The Literary Renaissance in England, 1500–1600. The effect of such influences as travel and discovery, Machiavellianism, Neoplatonism, the Courtier ideal, Lutheranism, and nationalism on the mediaeval tradition. Emphasis will be laid on prose writers, notably More, Sidney, Hooker, and Bacon. M W F 12:00

ENGLISH 400. Shakespeare and Modern Drama. A systematic study of Shakespeare followed by a rapid survey of modern drama. Open only to Seniors. M W F 9:00

ENGLISH 410. Nineteenth Century Prose, exclusive of the novel. (Alternates with English 420.) M W F 11:00

ENGLISH 420. Nineteenth Century Poetry. (Alternates with English 410.) (Not offered 1931–32.)

ENGLISH 500. An introductory course in Old English, followed by a careful reading of Beowulf. (Alternates with English 510.) Hours to be arranged.

ENGLISH 510. Chaucer. A close reading of the principal works, with emphasis both on linguistic and literary values. (Alternates with English 500.) (Not offered 1931-32.)

Requirements for Honours Course in English: four courses in English; two courses in Modern Languages, preferably French, German, or Italian; two courses in philosophy or history; all to be Junior or Senior courses and to be passed with high grades. Individual schedules and quality of work must be satisfactory both to the department and to the Committee on Honours Courses and Advanced Degrees.

FRENCH 100. First Year French. Oral exercises, dictation, grammar, composition, and study of simple French texts. M W F 8:00, 10:00 or 11:00 or T Th S 8:00, 9:00 or 10:00

FRENCH 200. Second Year French. Oral exercises, dictation, review of grammar, composition, study of representative authors, supplementary reading under the supervision of the instructor. M W F 12:00 or T Th S 10:00, 11:00 or 12:00

FRENCH 300. Third Year French. Composition and study of modern French texts with special emphasis on the syntax and the difficulties of the French language. A considerable amount of outside reading will be required. Reports and essays in French. M W F 9:00 or T Th S 11:00

FRENCH 310. Review of Grammar and Composition. Practice in reading and speaking. Phonetics. M W F 11:00

FRENCH 320. A survey of the entire history of French literature, with its social background. Open to students who have passed French 200. The course is intended for students of English and History as well as for those who desire to specialize in French. Lectures in English. M W F 10:00

FRENCH 330. Eighteenth Century Literature. M W F 9:00

FRENCH 400. French Composition. M W F 8:00

FRENCH 420. French Classicism. Lectures, collateral readings, reports, and essays. Conducted in French. M W F 12:00

FRENCH 430. Nineteenth Century Literature. T Th S 8:00

FRENCH 460. The Contemporary French Drama. Open to students who have passed French 300 or 320 A or B with a grade of III or better. T Th S 9:00

FRENCH 550. Seminar. French Romanticism. (Not offered 1931–32.)

FRENCH 560. Seminar. A study of the French Novel, 1830–1860. Hours to be arranged.

Requirements for Honours Course in French: French 300 or 310, and 320, 410 or 420, and 430 passed with high credit (grades of I or II). Individual schedules and quality of work must be satisfactory both to the department and to the Committee on Honours Courses and Advanced Degrees.

GERMAN 100. Elementary German. Pronunciation, grammar, dictation, conversation, translation, composition. Reading of a book. M W F 8:00, 10:00 or 12:00 or T Th S 8:00, 9:00 or 10:00

GERMAN 200. Second Year German. Introduction to a knowledge of Germany and the Germans, including a short survey of German literature. Reading of two books. German script, grammar review, discussion and composition in German. M W F 11:00 or T Th S 8:00 or 11:00

GERMAN 300. Lectures in German on classical German literature from Klopstock to Goethe. Study of eighteenth century classical works. Collateral and outside reading. German phonetics. Composition. The work will be carried on mainly in German. M W F 9:00

GERMAN 310. Life and Works of a prominent classical or modern writer, e.g., Goethe or Hauptmann. Literary translation, essays, discussions, and debates. The work of the course will be carried on in German.

(Not offered 1931–32.)

GERMAN 400. Lectures in German on German literature in the nineteenth and twentieth centuries. Study of nineteenth and twentieth century works. Collateral and outside reading. German culture. Composition. The work will be carried on mainly in the German language.

T Th S 9:00

GERMAN 410. Lectures in German on German literature from its beginnings down to Gottsched. Study of Walter von der Vogelweide's poems or of the Nibelungenlied. Survey of the history of the German language including an introduction into Middle High German. Advanced exercises in the oral and written use of the German language. The work of the course will be carried on in German.

Hours to be arranged

GERMAN 500. Seminar: Some topic of higher literary study. Mainly for graduates. (Not offered 1931–32.)

GERMAN 510. Seminar: Any one or two of the following: Gothic; Old High German; Old Norse. Mainly for graduates. Subjects in 1931–32: Gothic and Old High German.

Hours to be arranged.

The requirements for the Honours Course in German comprise six advanced courses: four in German, all to be passed with high credit; one in English; and one in European History. Individual schedules and quality of work must be satisfactory both to the department and to the Committee on Honours Courses and Advanced Degrees.

ITALIAN 300. Open to students who have had at least two years of French, Spanish, or Latin. Oral exercises,

grammar, composition, and reading of representative Italian authors. M W F 11:00

ITALIAN 400. Advanced Italian. A study of Dante. Prerequisite: Italian 300. T Th S 12:00

SPANISH 100. Beginning Spanish. Oral exercises, grammar, composition, and study of elementary Spanish texts. M W F 8:00

SPANISH 110. Intermediate Spanish. This course presupposes a knowledge of elementary Spanish (equivalent to one year with high credit or two years of high school Spanish). Oral exercises, dictation, grammar, composition, translation, and study of modern Spanish texts. M W F 10:00 or T Th S 11:00

SPANISH 200. A rapid beginning course in Spanish for students who are taking a regular course in another modern language. Oral exercises, grammar, and composition. M W F 12:00

SPANISH 210. Second Year Spanish. Oral exercises, review of grammar, composition, outside reading under the supervision of the instructor, and reports. Open to students who have completed three years of high school Spanish or Spanish 110. M W F 8:00 or T Th S 10:00 or 11:00

SPANISH 300. Third Year Spanish. Open to all students who have completed Spanish 200. Review of grammar, composition, essays, study of representative authors, collateral readings, and reports. M W F 8:00 or 12:00

SPANISH 320. Survey of the history of Spanish literature. Open to Juniors and Seniors who have taken Spanish 300 or 330 and to Sophomores upon special recommendation. M W F 8:00

SPANISH 330. Commercial Spanish. Open to students who have already taken Spanish 200 or 310. A general survey of the economic conditions in Spain and in Latin American countries. Reading of reviews and bulletins, reports, and practical exercises. T Th S 9:00

SPANISH 410. Hispano-American civilization and literature. Open to students who have already taken Spanish 300 or 330. Lectures, collateral readings, reports and discussions. Conducted in Spanish. M W F 10:00

SPANISH 420. Nineteenth century literature. Open to students who have already taken Spanish 320. Conducted in Spanish. T Th S 12:00

SPANISH 430. The Contemporary Spanish Novel. T Th S 10:00

Honours Courses in Spanish may be granted to students who have done exceptionally good work in Spanish and whose work in another language has been of high standing. The Spanish courses required are: Spanish 300, 320, 330, 410 and 420. Individual schedules and quality of work must be satisfactory both to the department and to the Committee on Honours Courses and Advanced Degrees.

LATIN 100. Review of grammar, translation and composition. A short introduction to Roman History and mythology. A study of Roman life in the age of Cicero.

Hours to be arranged.

LATIN 200. Translation at sight, prose and composition. A study of Prosody. A general introduction to Roman literature. (Not offered 1931–32.)

MATHEMATICS 100. Elementary Analysis. Trigonometry, analytic geometry, and introduction to calculus. This course is required for Freshmen because it forms a necessary introduction to work in mathematics and pure and applied science, and assists the students in developing habits of self criticism in thinking and writing. As one of the most modern of sciences and, at the same time, one of the most ancient of humanities, mathematics is regarded as an integral part in any general education.

M W F 11:00 or 12:00 or
T Th S 11:00 or 12:00

MATHEMATICS 0. Elementary Algebra. This course begins about March first. It does not count towards a degree, since it contains nothing which is not a part of the requirement for entrance to the Institute. This course is intended and required for any student who has to drop Mathematics 100 through lack of knowledge of high school mathematics.

MATHEMATICS 200. Differential and Integral Calculus. Elements of differential equations, differentials, definite integrals, infinite series, and their applications, especially

to mechanics. Prescribed for engineers who do not take Mathematics 210.

This course continues the work of Mathematics 100 in calculus and analytic geometry, with systematic applications to Newton's laws of motion and calculation of moments of forces and of inertia, centers of gravity, etc.

Students who have considerable facility in mathematical reasoning should register for Mathematics 210.

T Th S 8:00 or 9:00

MATHEMATICS 210. Differential and Integral Calculus. This course covers the ground of Mathematics 200 but is more complete and goes further. It is open to students who obtain high grades in Mathematics 100, or otherwise satisfy the instructor of their fitness to take the course. A feature of this course is the writing of theses on the applications of mathematics to science, engineering, and philosophy, so that the student shall have practice in expressing himself in clear English. T Th S 8:00

MATHEMATICS 220. Algebra and Mechanics. Solutions of equations, vectors, invariants, determinants, and interpolation; systematic statics and parts of dynamics. This course, required for engineers, fits the student with the algebraic technique necessary for the applications, and concerns itself with the fundamental principles of mechanics, and applications to machines and structures. It may be counted as a junior course if the student makes studies of additional thesis and problem subjects. T Th S 8:00 or 9:00

MATHEMATICS 300. Advanced Calculus and Dynamics. Differentiation and integration of functions of several

variables, differential equations, Fourier series, systematic dynamics. This course or Mathematics 310 should be taken by students whose major interest lies in science or engineering; it is open to those who have passed Mathematics 200 and 220, or otherwise satisfy the instructor of their fitness to take it. M W F 8:00

MATHEMATICS 310. Advanced Calculus and Dynamics. Students with considerable facility in mathematical reasoning should take this course rather than Mathematics 300, the ground of which it covers. Such students may take Mathematics 220 during the same year. Opportunity to write theses is given. M W F 8:00

MATHEMATICS 320. Geometry. A survey of elementary projective geometry using both synthetic and analytic methods; algebraic forms and their invariants. Metrical geometry; development of properties of space of distance relations, with applications to analytic and axiomatical geometry. M W F 10:00

MATHEMATICS 400. Theory of functions, real and complex variable. The important functions of analysis and modern general methods. T Th S 12:00

MATHEMATICS 420. Differential and Integral Equations. Boundary value problems. Groups.

Hours to be arranged.

MATHEMATICS 500. Theory of functions of a complex variable. The algebraic functions and their integrals, functions of two or more complex variables and differential equations. Hours to be arranged.

MATHEMATICS 510. Theory of functions of a real variable. Summable functions, Lebesgue and Stieltjes integrals, general integrals, functions of point sets and of plurisegments; Fourier series. Hours to be arranged.

APPLIED MATHEMATICS 310. Finance, statistics and probability. Mathematical theory of investment, analysis of statistics as applied to economics and biology, theory of probability. M W F 12:00

APPLIED MATHEMATICS 320. Mathematical Introduction to Economics. A study of a unified sequence of economic problems by means of the elementary methods of the calculus. Mathematics 200 or 210 is a prerequisite.
T Th S 11:00

APPLIED MATHEMATICS 500. Advanced Mechanics and Relativity. This course assumes some knowledge of differential geometry, and gives the theory of Einstein and Weyl, based on the absolute calculus of Ricci and Levi-Civita. Hours to be arranged.

APPLIED MATHEMATICS 510. Potential theory. Laplace's and related equations. Boundary value problems. The Plateau problem. Hours to be arranged.

APPLIED MATHEMATICS 520. Celestial Mechanics and Cosmogony. Planetary motion, forms of equilibrium of rotating and radiating masses, and the evolution of stellar systems. (Not offered in 1931–32.)

SEMINAR IN MATHEMATICS. The Seminar meets every other week in order to allow the exposition of original investigations by its members. W 2:00–5:00

SEMINAR IN MATHEMATICAL PHYSICS. A course in the mathematical methods of modern physics, given cooperatively by members of the Seminar. Hours to be arranged.

Besides these courses as listed above, to be given during the academic year 1931–32, others may be given to suit the needs of students. Reading courses are also offered in analysis, geometry, and applied mathematics in connection with research in those fields.

PHYSICS 100. A course of two experimental lectures, one recitation and three hours of practical work per week on heat, light, mechanics, sound, magnetism, and electricity. This course is intended for those who wish to obtain some general knowledge of the principles of natural philosophy on which the modern applications of science to human activities are based. The scientific method of dealing with facts and theories is explained and made familiar by numerous experimental demonstrations and laboratory exercises. For the practical work thirty complete sets of apparatus are available for simple experiments in heat, light, sound, mechanics, magnetism, and electricity. Students taking Physics 100 must have taken or be taking Mathematics 100.

T Th S 10:00 Laboratory T W or Th 2:00–5:00

PHYSICS 200. A course of three lectures and three hours of practical work per week on dynamics, electricity, and magnetism. This course with Physics 100 makes up a complete course on the principles of physics which is required of all engineering students and should be taken by students intending to specialize in physics, chemistry, medicine, law, biology or mathematics. In this course the

fundamental principles of electrical theory are explained and illustrated, including the elementary theory of direct and alternating currents, electric transmission of power, wireless telegraphy, and other modern developments. In the laboratory the students are taught how to make measurements of all the important electrical quantities such as current, resistance, potential, capacity, magnetic intensity, magnetic properties of iron and steel and electrochemical equivalents, etc. Thirty complete sets of apparatus are available for this work. Students taking Physics 200 must have completed Mathematics 100 and must take Mathematics 200 or 210 at the same time as Physics 200.

M W F 9:00 Laboratory F 2:00–5:00 S 9:00–12:00

PHYSICS 300. A course of three lectures and three hours of practical work per week on properties of matter, and physical optics. This course and Physics 310, 320, and 330 together make up a more advanced course on physics, supplementing the elementary work done in Physics 100 and 200. The laboratory work includes exact measurements of such quantities as elastic properties of metals, surface tension of liquids, viscosity of liquids, mechanical equivalent of heat, conductivity for heat of solids and liquids, vapor pressure of liquids, temperatures with resistance thermometers, thermocouples and radiation pyrometers, and experiments on spectroscopy, interference, diffraction, and polarization of light. Students taking this course must have completed Mathematics 200 or 210.

M W F 9:00 Laboratory M 2:00–5:00

PHYSICS 310. A course of three lectures and three hours of practical work per week on electricity. This course includes a study of the electrical properties of gases, including cathode and positive rays, Roentgen rays, thermionics, and radioactivity. Also, electric oscillations, electron tubes and their applications. Students taking this course must have completed Mathematics 200 or 210.

(Not offered 1931–32.)

PHYSICS 320. Three lectures per week on mechanics, including general theory of vector fields, of vibrations, and of potential. Also the theory of the electro-magnetic field and of light. M W F 10:00

PHYSICS 330. Chemical Physics. Three lectures per week on thermodynamics, including chemical equilibrium and affinity, the theory of cracking petroleum, quantum theory of specific heats, radiation and spectra, osmotic pressure and properties of solutions, theory of voltaic cells, etc. Students taking this course must have completed Mathematics 200 or 210. (Not offered 1931–32.)

PHYSICS 340. About ten lessons on glass blowing of one hour each. Limited to twelve students. This course will be given from time to time as required. No credit is given for this course.

PHYSICS 350. Three lectures per week on geophysics. Gravitational anomalies due to underground structures. The torsion balance. The propagation of explosion and other waves in the earth. The seismograph. Electrical and magnetic methods of prospecting for oil and other minerals.

(Not offered 1931–32.)

PHYSICS 400. Physics Colloquium. One meeting a week at which present-day researches in physics will be discussed. No credit is given for this course but graduate students and students taking honours courses in physics are expected to attend the course.

PHYSICS 500. Two lectures per week on electromagnetic theory, electron theory, and special theory of relativity. (Not offered 1931–32.)

PHYSICS 510. Two lectures per week on electricity in gases, X-rays, crystal structure, and radioactivity. (Hours to be arranged.)

PHYSICS 520. Two lectures per week on quantum mechanics. (Not offered 1931–32.)

PHYSICS 530. Two lectures per week on statistical mechanics and general theory of relativity. (Hours to be arranged.)

PHYSICS 540. Research work in physics.

Attention is invited to the fact that many opportunities exist at the present time for persons possessing adequate training in physics and mathematics to engage in industrial research. A large number of industrial corporations now maintain research laboratories for the carrying on of such work. Among these may be mentioned the General Electric Company, the Bell Telephone Company, the Eastman Kodak Company, the Bureau of Standards, and others. Students desiring to qualify for positions in such establishments should take the honours course in physics and then, if possible, take a graduate course in physics leading to

the M.A. or the Ph.D. degree. However, positions in research laboratories and at the Bureau of Standards are open to men who have taken the B.A. degree with honours in physics. The honours course in physics may be taken up by students who have completed the first two years of an engineering course as well as by academic students. Several fellowships in physics are available at the Institute to enable students to take graduate work in physics.

CHEMISTRY 100. Introductory Chemistry. Two lectures, one recitation and six hours' laboratory work weekly. A general introductory course dealing with the fundamental phenomena and principles of the science. During the first half-year the laboratory exercises are arranged to verify and illustrate the principles and facts which are discussed in the lectures. During the last half-year the laboratory work deals with the general principles and methods of qualitative analysis.

M W F 8:00 Laboratory W and F 10:00–1:00 or W and F 2:00–5:00

CHEMISTRY 110. General Chemistry. Two lectures, one recitation and five hours' laboratory work weekly. This is a general introductory course differing from Chemistry 100 only in giving more attention to elementary organic chemistry and biochemistry. It is designed especially for and open only to students taking the course in physical education. T Th S 8:00 Laboratory T Th 9:00–11:30

CHEMISTRY 220A. Quantitative Analysis. A course arranged for chemical engineers and for academic students specializing in chemistry. Three lectures and nine hours'

laboratory work weekly. This course aims to familiarize the student with the fundamental principles of analytical chemistry. Special emphasis is placed on chemical mathematics and stoichiometry. The laboratory work embodies a study of the representative processes in the quantitative determination of the common metals and acids, covering the methods of gravimetric, volumetric, and electroanalysis. Throughout the work particular attention is given to general analytical technique.

M W F 8:00 Laboratory M T Th 2:00–5:00

CHEMISTRY 220B. Quantitative Analysis. A course arranged primarily for pre-medical students and for engineers other than chemical engineers. Three lectures and six hours' laboratory work weekly. This course differs from Chemistry 220A only in the nature and scope of the laboratory work.

M W F 8:00 Laboratory M T W or Th 2:00–5:00

CHEMISTRY 230A. Industrial Geology and Blow Pipe Analysis. Two lectures and three hours' laboratory work weekly. This course is arranged especially to meet the requirements of the chemical engineer. It consists of (1) a brief survey of historical geology that attempts to explain the origin of formations on the earth, (2) a detailed examination of the economic rocks, minerals and other natural resources, and (3) a comprehensive study of the surface features of the earth, with emphasis on the forces and agents which have produced and are producing these results.

The laboratory work consists of the qualitative and quantitative analysis of minerals and rocks together with their

identification and classification. Prerequisite: Chemistry 220 or taking 220. T Th 11:00 Laboratory W 2:00–5:00

CHEMISTRY 230B. Industrial Geology and Blow Pipe Analysis. A course for academic students. Similar to Chemistry 230A except for six hours' laboratory work weekly. T Th 11:00 Laboratory W F 2:00–5:00

CHEMISTRY 300. Elementary Organic Chemistry. Three hours' lecture and recitation, and six hours' laboratory work weekly. The course is designed to cover the introductory chemistry of the principal classes of organic compounds, and to present the more important theories relating to their structure and reactions. Prerequisite: Chemistry 220. M W F 8:00 Laboratory M Th 2:00–5:00

CHEMISTRY 310. Physical Chemistry. Two lectures, one recitation and six hours' laboratory work weekly. A systematic presentation of modern chemical theories and their applications. Prerequisites: Chemistry 220, Physics 200 or taking Physics 200.
T Th S 8:00 Laboratory W F 2:00–5:00

CHEMISTRY 410. Colloid Chemistry. Two lectures and four hours' laboratory work weekly. The course treats of the theories of colloid chemistry and their applications in biology and the arts. Prerequisite: Chemistry 310.
M W 9:00 Laboratory W 1:30–5:30

CHEMISTRY 420. Electrochemistry. Two lectures and four hours' laboratory work weekly. The course includes the principles and applications of the accurate electrochemical measurements which are employed in industries

and in research, the electrical control of chemical reactions, the electron theory of matter, of valence, and of chemical reaction. Prerequisite: Chemistry 310.

T Th 10:00 Laboratory Th 1:30–5:30

CHEMISTRY 430. Chemical Engineering. Three lectures and six hours' laboratory work weekly. In this course are considered the principles upon which the mechanical operations involved in the chemical manufacturing industries depend, together with a study of the types of equipment available for such operations and the kind of work for which each is best adapted. The application of the principles is illustrated both by discussion in the class-room and by the solution of typical problems. Among the subjects considered are applied stoicheiometry, furnaces and combustion, the flow of heat, crushing and grinding, the separation of solids, extraction, filtration, distillation, evaporation, the flow of fluids, humidification, and air drying. The laboratory course involves experiments in commercial analysis, in instrument calibration, in measurement of flow of liquids and gases, in evaporation, filtration and drying, and in electric furnace work. Prerequisite: Chemistry 310.

M W F 8:00 Laboratory M and F 2:00–5:00

CHEMISTRY 440. Advanced Organic Chemistry. The work of the first half-year is devoted to qualitative organic analysis, requiring one hour of conference and nine hours of laboratory weekly. This portion of the course embodies a systematic procedure for the separation and identification of pure organic compounds. It aims to review, by actual

laboratory contact, the important reactions of the main series of organic substances.

During the second half-year there will be three lectures per week on advanced organic topics, such as tautomerism, geometric and optical isomerism, chemistry of carbohydrates, chemistry of free radicals, terpenes, etc. The laboratory work of the second half-year requires six hours per week and is devoted to quantitative organic analysis (including combustion methods for carbon, hydrogen, and nitrogen, and the Carius method for the halogens) and to advanced organic synthesis. A short experimental research problem will be assigned each student in which he may apply the principles learned during the course. Prerequisites: Chemistry 300, Chemistry 310, or taking 310.

Hours to be arranged.

CHEMISTRY 450. Advanced Analytical Chemistry. One lecture and six hours' laboratory work weekly. During the first part of the course experiments are given in the systematic analysis of complex substances such as minerals and alloys. The primary object of the course is the study and application of some special methods of quantitative analysis. These methods include micro-analysis, electrometric analysis, X-ray analysis, and gasometric analysis. Prerequisites: Chemistry 220 and 310.

Hours to be arranged.

CHEMISTRY 460. Biochemistry. Three lectures and six hours' laboratory work weekly. During the first part of the year the course consists of the study of elementary biochemistry from a physico-chemical standpoint. The newer methods of blood, urine, and gastric analyses are

investigated during the last half-year. This course is designed primarily for the chemistry student, and is not intended to replace similar courses given in medical schools. Prerequisites: Chemistry 220 and 300, and Biology 100.

M W F 9:00 Laboratory hours to be arranged.

CHEMISTRY 470. Experimental Problems. Chemical engineers and students who are specializing in chemistry may elect in their Senior year at least nine hours a week in experimental problems under the direction of some member of the staff of instruction.

CHEMISTRY 480. History of Chemistry; Chemical Literature. One hour per week. A series of lectures is given during the first half-year on the history of chemistry, the purpose being to stress the important advances which have been made in chemistry and to acquaint the student with the chemists mainly responsible for them.

The second half-year is devoted to a study of chemical literature and its use. It is the aim of this portion of the course to demonstrate to the student the literature of chemistry, how it is arranged and made available, to give some practice in its use, and also to indicate the growth of the science. During this time a topic will be assigned to each student for complete library investigation. The report of this work will be submitted to the class by the student. This course is required for all Senior chemical engineers and Senior students specializing in chemistry.

W 12:00

CHEMISTRY 500. Chemical Research. Chemical engineers or students who are specializing in chemistry are

expected in their fifth year to elect at least nine hours a week in research under the direction of some member of the staff of instruction.

CHEMISTRY 510. Adsorption. Lectures and conferences two hours per week. A course dealing with the nature and mechanism of adsorption and its relation to contact catalysis, the stability of colloidal solutions, emulsification, the permeability of membranes, photochemical sensitivity, etc. Given in 1932–33 and every third year thereafter.

CHEMISTRY 520A. Photo-chemistry and Catalysis. Lectures and conferences two hours per week. The course considers the chemical effects of light, the chemical production of light, catalysis and chemical reactivity from the experimental point of view. Modern atomic and molecular theories and the quantum theory of chemical activation are discussed. Given in 1931–32 and every third year thereafter.

CHEMISTRY 520B. The Phase Rule. Lectures and conferences two hours per week. This course deals with the principles underlying the phase rule and their application to the classification and investigation of equilibria. Consideration is given to one-component systems, two-component systems in which compounds are not formed, two-component systems in which compounds are formed, and three-component systems. Given in 1933–34 and every third year thereafter.

CHEMISTRY 530. Industrial Chemistry. A continuation of Chemistry 430. This course consists of a more detailed examination of the basic laws of chemical engineering practice leading to the design and operation of

plant equipment. The laboratory work consists of experiments leading to the formulation of laws governing the operation of apparatus set up in the industrial laboratory or designed and built to meet the needs of the individual problem at hand. Prerequisite: Chemistry 430.

Hours to be arranged.

CHEMISTRY 540. Selected Topics in Organic Chemistry. Two conferences per week. Discussion of such topics as: the electron theory of valency applied to organic chemistry; the effect of structure on the reactivity of organic compounds; the constitution of benzene; the chemistry of the heterocyclic compounds, etc., with special emphasis on recent work. A reading knowledge of French and German will be necessary as assignments will be made to the original literature. Given in 1933–34 and every third year thereafter.

CHEMISTRY 550. Sub-Atomic Chemistry. A seminar course. Consideration is given to those chemical phenomena which, according to modern atomic theory, are characteristic of and intimately related to the structure of atoms. The work of this course will necessitate considerable reading in French and German journals. Given in 1932–33 and every third year thereafter. Hours to be arranged.

CHEMISTRY 560. Advanced Biochemistry. This is a lecture course dealing with the important organic substances that are produced in plant and animal life. The physiological action, natural occurrence, and laboratory synthesis of substances such as adrenaline, thyroxin, insulin,

hemoglobin, the alkaloids, the purines, and other compounds will be studied. Prerequisite: Chemistry 460. Given in 1933–34 and every third year thereafter.

CHEMISTRY 570. Microchemical Analysis. One lecture and six hours' laboratory work weekly. A course in quantitative micro-analysis based on the procedures of Fritz Pregl. Prerequisite: Chemistry 440.

Hours to be arranged.

CHEMISTRY 580. Chemistry Seminar. Meetings are held fortnightly at which modern researches in chemistry are presented and discussed by members of the chemistry staff and graduate students in chemistry. Attendance is open to all members of the Institute.

Students who desire to take their major work in chemistry should select their courses according to the following arrangement: First year, Chemistry 100; Second year, Chemistry 220 and 230; Third year, Chemistry 300 and 310; Fourth year, Chemistry 420 and one or more elective courses in chemistry. The related courses in mathematics and physics should also be taken during the first two years if possible.

In addition to the general requirements for advanced degrees given on pages 46 and 47, the following specific requirements must be met by candidates taking their major work in chemistry.

For admission to full graduate standing, candidates for advanced degrees in chemistry must have completed general courses equivalent to Chemistry 100, 220, 300, and 310 in the Rice Institute and two additional advanced

courses equivalent to two 400 courses in chemistry in the Rice Institute.

The courses for which graduate credit is given may be grouped as follows:

GROUP I

Chemistry 410 Colloid Chemistry
Chemistry 420 Electrochemistry
Chemistry 450 Advanced Analytical Chemistry
Chemistry 510 Adsorption
Chemistry 520A Photochemistry and Catalysis
Chemistry 520B The Phase Rule
Chemistry 530 Industrial Chemistry
Chemistry 550 Sub-Atomic Chemistry

GROUP II

Chemistry 440 Advanced Organic Chemistry
Chemistry 460 Biochemistry
Chemistry 540 Selected topics in Organic Chemistry

In addition to the thesis, candidates for the M.A. degree will complete three courses distributed as follows: one Group I course, one Group II course, and one approved 300 or 400 course in mathematics, physics, or biology.

In addition to the thesis, candidates for the Ph.D. degree will complete six courses distributed as follows: if specializing in general or physical chemistry, three Group I courses, two Group II courses, and Physics 420; if specializing in organic chemistry, three Group II courses, two Group I courses, and one approved 300 or 400 course in mathematics, physics, or biology. Before the beginning of the

academic year in which the student expects to receive his degree, he must satisfy the members of the staff under whom he is working that he possesses a reading knowledge of scientific French and German. The first week in May of the last year of residence, the candidate will be given three-hour written examinations in general chemistry and organic chemistry.

Graduate assistants and fellows who devote as much as six hours per week to teaching will, in general, be expected to spend two years in residence for the master's degree and four years in residence for the doctor's degree.

BIOLOGY 100. About half the year is given to the study of human physiology in connection with the study of structure, both gross and microscopic. A brief survey of the general principles of infection and immunity is included. The other half of the year is given to a study of morphology, ecology, embryology, and physiology, both animal and plant. The evolutionary point of view is presented at the very start; and, wherever feasible, is made the basis for the presentation, or of the interpretation, of the subject-matter at hand. Emphasis is placed on such topics as are of human interest or application. Three lectures and one three-hour laboratory period per week.

M W F 9:00 Laboratory W Th or F 2:00–5:00

BIOLOGY 220. The first part of the year is devoted to a study of the relation of insects and their allies to the spread of disease, with special emphasis on such important disease transmitters as mosquitoes, flies, etc. Following this the parasitic worms and protozoa are studied, especially those of local importance, causing hookworm disease,

malaria, syphilis, etc. The final part of the year is devoted to an introduction to bacteriology, particularly the sanitary aspects of it. A general cultural course for academic students and for sophomore pre-medical students.

M W F 9:00 Laboratory W 2:00–5:00

BIOLOGY 240. An Introduction to Animal Ecology. A course dealing with the natural history and ecology of animals. A study is made of the classification, life histories, habits, and habitats of both invertebrate and vertebrate groups. In addition, the principles of geographic distribution, the economic importance of various groups and species, the principles of the control methods of pests, and the principles of conservation and propagation of economically valuable forms are carefully considered. The course is designed to demonstrate the natural relations of animals to their environment, to each other, and to man, and to show how these relations may be modified and controlled. A general cultural course as well as one adapted to the needs of students preparing to teach biology. Prerequisite: Biology 100. M W F 11:00 Laboratory M 2:00–5:00

BIOLOGY 290. Physiology and Anatomy, for Physical Education students. A study of the structure and functions of the human body, supplemented in the laboratory by anatomical dissections of a mammal with comparisons with a human model, and experiments on the physiology of the various systems of organs as they are taken up.

T Th 8:00–11:00

BIOLOGY 330. The Biology of Insects. A study of the structure, function and habits of insects dealing with such

phases of insect life as adaptations to environment, relations of insects and plants, social habits, color and mimicry, behavior, etc. The course is designed for students desiring a general cultural knowledge of insects as a basis for teaching or for advanced work in entomology.

(Not offered 1931–32.)

BIOLOGY 340. Comparative Anatomy. A study of the structure of vertebrate animals, beginning with simple forms and leading up to an understanding of mammalian anatomy, with emphasis on the origin and phylogenetic development of the organs and structures of the human body. Designed for pre-medical students in the junior or senior year.

T Th S 10:00 Laboratory M 2:00–5:00

BIOLOGY 360. Heredity and Evolution. The first part of the course is devoted to a discussion of the principles of heredity. Whenever practicable, cases of human inheritance are referred to and used in illustrating or in leading to the general principles. Topics discussed and interpreted from the viewpoint of genetics are twinning, regeneration, development, sexual and asexual reproduction. The study of evolution is taken up next. It includes a consideration of cosmic and geological evolution, the succession of animal and plant forms in time, including man's place in this process and his present and possible future evolution. Prerequisites: two courses in Biology. M W F 11:00

BIOLOGY 380. Physiological Histology. A study of microscopical anatomy of mammals, including man, with an interpretation of function from cellular make-up. Living

tissues will be studied when possible, supplemented by a study of stained preparations. Coördination of the cells in the operation of living organs and tissues will be studied in situ, including a consideration of factors which condition or modify the activities. Students will make graphic records of the functioning of organs, and will be taught the technique of cutting and staining tissues. Recommended for pre-medical students, and for all students specializing in Biology. (Alternates with Biology 450.)

(Not offered 1931–32.)

Biology 390. Hygiene and Public Health. A course of lectures for physical education students. Such subjects are discussed as the care of the body, infection and resistance, epidemiology, care of water, milk and other foods, sewage disposal, housing and ventilation, health legislation, social problems, vital statistics, etc. (Not offered 1931–32.)

Biology 400. Special work in Biology. This course will consist of advanced work in special fields of biology for students specializing in the subject, and will be adapted to the needs of the particular student.

Hours to be arranged.

Biology 450. General Embryology. A comparative study of the early development of animals, with special reference to the higher vertebrates. The principles and important results of experimental embryology are also discussed. Prerequisites: two courses in Biology. Recommended as an upper-class course for pre-medical students.

M W F 10:00 Laboratory T 2:00–5:00

BIOLOGY 470. General Bacteriology and Immunology. Sterilization, preparation of media, and methods of cultivation; disinfection; nature and relationships of various types of microörganisms; introduction to bacteriology of air, soil, water, sewage, dairy products and other foods, and important human, animal and plant diseases; the principles of immunology and their application to preventive and curative medicine. Special emphasis on public health and hygienic aspects of the subject. A natural sequence to Biology 220. Prerequisites: Biology 100 and Chemistry 100. (Alternates with Biology 340.)

(Not offered 1931–32.)

BIOLOGY 520. Biological Research. Principles and methods of research, and the working out of a special research problem, with investigation of the literature bearing on the subject selected. Graduate course for students specializing in Biology.

To students looking forward to the study of medicine on graduation from the Rice Institute, a four years' course is available leading to the B.A. degree and meeting the requirements for entrance to medical college. In addition to the required subjects in the general B.A. course, this programme includes the following subjects for the years indicated: first year, Biology 100 and Chemistry 100; second year, Chemistry 220 and Physics 100; third and fourth years, Biology 380 and Biology 470 and Chemistry 300, or Biology 340 and Biology 450 and Chemistry 310, these sets of courses alternating in successive years in conformity to the alternation of the biology courses involved. If desired, Biology 220 may be substituted for Biology 450 or Biology

470. It is further recommended that prospective medical students take two courses each in French and German.

PSYCHOLOGY 200. General Introduction to Psychology. In this course both the introspective and the behavioristic approaches to the subject are taken into account. The lectures will be supplemented by demonstrations and class experiments. The main topics discussed are: the physiology of the nervous system and the sense-organs, reflexes, instinctive activity, sensation and perception, feeling and emotion, memory and learning, intelligent behavior, personality. Near the end of the course a survey will be given of one or two special fields of the subject, such as animal psychology or abnormal psychology. This course presupposes a certain amount of elementary training in the fundamental sciences of biology and physics; it is strongly advised, though not at present required, that students take Biology 100 either before or concurrently with this course. T Th S 10:00

PSYCHOLOGY 300. In the first half-year the subject will be modern schools and theories in psychology. Structural psychology, behaviorism, and Gestalt-theory will be among the tendencies discussed. The work will consist of lectures, assigned reading, and a thesis. In addition there will be laboratory exercises on the topics of sensation, perception, association and memory, feeling and emotion, attention, and the measurement of intelligence. In the second half-year the subject will be abnormal psychology. The enrollment in this course is limited; in general, it is required that students who enroll shall have passed Psychology 200 with a mark of III or above.

T Th S 12:00 Laboratory (first half-year) T or F 2:00–5:00

ECONOMICS 100. A general course of introductory nature designed to prepare for economic studies. The work includes readings, lectures, and discussions in economic history, concepts and elements of economic theory, business organization, statistical methods, accounting, and business finance. This course is planned primarily for students in the Department of Physical Education.

M. W. F. 10:00

ECONOMICS 200. Elements of Economics. An introductory course analyzing and interpreting our present economic system. The approach to the subject is institutional, emphasizing the pecuniary basis of society, the use of funds, the credit structure, market practises, the rôle of the consumer, the position of the worker, and the instrumentalities of control. The principles of economics essential to progress in advanced courses in economics and business administration are correlated with the problem studies.

T Th S 11:00

ECONOMICS 320. Labor Problems and Public Finance. The first half-year is devoted to the history of the labor movement, with a careful consideration of the aims, practises, and institutions of organized labor. Industrial unrest is analyzed and the proposed remedies are evaluated. Progressive labor legislation is covered in detail. Taxation theory and practise is the work of the second half-year. Special consideration is given to the economic problems involved in various methods of taxation. Systems of public finance are examined and compared. Prerequisite: Economics 200.

T Th S 9:00

ECONOMICS 450. Transportation. The course deals with the historical, social and economic aspects of the transportation business, the development of the agencies of transport, and existing systems. Railroads occupy most of the field of study. The principles of economics are applied to such problems as railway finance, competition, valuation, rate-making, extensions and abandonments, regulation, the extent and nature of legislative, judicial, and commission control of common carriers. The growth of rate structures such as that of Texas is particularly considered. Prerequisites: Economics 200 and Business Administration 200. Hours to be arranged.

SOCIOLOGY 200. An introduction to Sociology. The course includes an analysis of the geographical and biological factors in social evolution, social psychology, and a study of the functions of citizenship. There is added a rapid survey of modern social problems such as those of poverty, industry, immigration, public health and delinquency. Students expecting to take this course are advised to take Biology 100, one course in college History, and Economics 200. M W F 11:00

BUSINESS ADMINISTRATION 200. Business Management. A complete course in elementary accounting furnishes the approach to business administration. The principles developed are applied to the partnership and corporate forms of business enterprise. After considering the construction and interpretation of financial and operating statements, the course introduces such special subjects as consignments, selling through branches, and installment sales.

T Th S 8:00 or 9:00

BUSINESS ADMINISTRATION 210. This course is planned along the same lines as Business Administration 200 but is open only to those who have had the background offered in Economics 100. M W F 10:00

BUSINESS ADMINISTRATION 300. Money and Banking. History of the currency. Organization and regulation of commercial and investment banks. The Federal Reserve System. Credit and instruments of credit, corporate securities, capitalization, reorganization, depreciation, and reserves. Open to students who have completed Business Administration 200 or Economics 200. T Th S 9:00

BUSINESS ADMINISTRATION 400. Advanced Accounting and Auditing. The course offers an intensive survey of such subjects as the construction and interpretation of financial and operating statements, the valuation of assets and liabilities, the treatment of funds and reserves, the liquidation and dissolution of partnerships and corporations, and the consolidation of balance sheets and operating statements. The course closes with a study of the theory and practice of modern auditing. The course is designed to meet the needs of a student who contemplates a possible career as a corporation auditor or comptroller, or a certified public accountant. M W F 12:00

EDUCATION 310. History of Education. A survey of the development of educational theory and practice. Prerequisites: One year of History in college, and Philosophy 210 or taking Philosophy 300. (Alternates with Education 320.) M W F 8:00

EDUCATION 320. Educational Classics. An intensive study of some of the outstanding writings in educational theory, beginning with the Ancients and extending through the modern period. Prerequisites: One year of History in college, and Philosophy 210 or taking Philosophy 300. (Alternates with Education 310.) (Not offered in 1931–32.)

EDUCATION 410. Introduction to High-School Teaching. The psychological principles and methods of teaching with special reference to secondary education. Prerequisite: Psychology 200. M W F 10:00 or 11:00

The Department of Education of the State of Texas will grant, under the Certificate Law of 1921, the following certificates to students of the Institute:

1. Four-year Elementary Certificate. An elementary certificate valid for four years will be granted to students who have satisfactorily completed five full courses, one of which must be in Education and bear on elementary teaching, another of which must be in English, and of which not more than two courses are in the same subject.

2. Six-year Elementary Certificate. An elementary certificate valid for six years will be granted to those who have satisfactorily completed two full years of college work, including two full courses in Education.

3. Permanent Elementary Certificate. A permanent elementary certificate will be granted to the holders of the six-year certificates after five years of successful teaching or after four years of successful teaching and one year of college work taken after the issuance of the certificate.

4. Two-year High-School Certificate. A high-school certificate valid for two years (valid only in the elementary grades and in third-class and unclassified high-schools) will be granted to any student who has completed five full college courses, one of which is in Education, another of which is in English, and not more than two of which are in any one subject.

5. Four-year High-School Certificate. A high-school certificate valid for four years will be granted to any student who completes two years of college work, including two courses in Education, one of which bears on high-school teaching.

6. Permanent High-School Certificate. A permanent high-school certificate will be granted to those who have a B.A. degree (or any equivalent Bachelor's degree or higher academic degree) and have had two full courses in Education, one of which bears on high-school teaching, and who have completed three years (27 months) of successful teaching subsequent to taking the degree.

It should be noted that high-school certificates are valid for the elementary grades and the holder of an elementary certificate, based on two years of college work, can teach in third-class and unclassified high-schools.

Certificates which are expiring may be renewed repeatedly by completing six semester hours of college work in any college or university recognized as first class by the State Department of Education, provided the certificate has not expired by the beginning of the summer term during which the said work is done.

Attention should also be called to the fact that, after September, 1930, a college course in "Constitutions" will

be required for the issuance of a teacher's certificate in Texas. History 310A is planned to meet this requirement.

Students expecting to secure the Institute's recommendation for a teaching position should consult the department offering the work of their primary interest in order that their course of study may be properly planned.

HISTORY 100. Foundations of Western Civilization. This course is intended as an introduction to historical methods of thinking, and will include a survey of human achievement from prehistoric times through antiquity and the Middle Ages to the early modern period. The chief emphasis will be placed on the contributions of the Greeks and Romans. Not open to students who have taken History 110.

T Th S 8:00

HISTORY 200. Modern European History, 1500–1815. This course includes the study of the Reformation, the religious wars, the age of Louis XIV, the rise of Prussia and Russia, colonial rivalry, the French Revolution, and the Napoleonic era. Not open to students who have taken History 130. M W F 8:00

HISTORY 240. English History to 1783. A general outline of English history with special attention given to constitutional growth and economic changes. Not open to students who have taken History 120. M W F 12:00

HISTORY 300. American History. A survey of certain important general movements in the development of the United States. The topics will be selected to give training

in the use of historical evidence and to emphasize the essential unity of economic, social, and political factors. Open to juniors who have completed one college course in history. T Th S 10:00

HISTORY 310A. American Federal and State Government. A study of the history and operation of constitutional government in the United States and in the states, with especial reference to the historical background and operation of the government of Texas. This course is planned for the general student of government and is also designed to meet the certificate requirements for teaching in the state of Texas. The course will extend over one-half year.

HISTORY 310B. Constitutional Government in England and France. A study of the origins and operation of constitutional government, the formation of public policy and the conduct of public business in England and France. This course will extend over one-half of a year and students desiring credit for a full year course at the Rice Institute should take both History 310A and History 310B. M W F 10:00

HISTORY 320. The Development of European Culture, 300–1500. This course will attempt to trace the evolution of Western European civilization from the decline of the Roman Empire to the Sixteenth Century. Intellectual movements will be stressed throughout and correlated with social, economic, and religious factors to give the student a composite picture of the culture of this period. Frequent reference will be made to the antique Graeco-Roman basis,

and Byzantine and Mohammedan contributions to the Latin West will be considered. Prerequisite: History 110; Philosophy 300 recommended. (Not offered 1931–32.)

HISTORY 340. English History from 1783. The condition of the people, the development of industry, commercial policy, colonial expansion, administrative organization, and English aims in international law will be among the subjects studied. Not open to students who have taken History 210. M W F 9:00

HISTORY 350. Europe since 1815. This course will constitute a study of the social, political and economic history of Europe since the Congress of Vienna, including the democratic movement to 1848, the industrial revolution, the new nationalism and modern imperialism. Much attention will be given to the antecedents of the World War and to the situation in post-war Europe. Not open to students who have taken History 230. M W F 10:00

HISTORY 370. Mediaeval Latin. Survey and translation of typical mediaeval sources. The selections will be studied from the point of view of historical significance and of literary appreciation. This course is intended for students of history and the modern languages who desire to acquire some familiarity with ordinary mediaeval Latin texts. Prerequisites: History 100 and four years of high school Latin. T Th S 11:00

HISTORY 420. Mediaeval Sources. Similar to History 370 but more advanced, with intensive reading and reports on special topics in mediaeval literature and intellectual his-

tory. Prerequisites: History 320 and four years of high school Latin, or the special consent of the instructor.
Hours to be arranged.

HISTORY 440. Advanced English History. This course is an introduction to historical research through the study of manuscript letters and diaries, tracts, parliamentary journals, and other historical documents of the early Stuart period. Open to juniors and seniors qualified by their ability to do extensive reading. T 2:00–5:00

HISTORY 450. Diplomatic Origins of the World War. After a brief survey of European diplomacy (1871–1914) this course will consist largely of research on selected topics. Special attention will be given to methods and materials. A reading knowledge of French or German, or the special consent of the instructor is required. Hours to be arranged.

HISTORY 500. American History since 1850. A seminar course for the intensive study of selected topics. Prerequisites: History 100, History 300, Economics 200, or their equivalents. Open to graduate students after consultation with instructor. (Not offered in 1930–31.)

JURISPRUDENCE 300. A course planned to give the student a knowledge of the history of the development and of the philosophy of law, together with a knowledge of the essentials of selected divisions of modern law, including Criminal Law, Torts, Contracts, Agency, Partnership, Negotiable Instruments, and Private Corporations.
M W F 8:00

PHILOSOPHY 210. Logic and Ethics. First half-year: an elementary analysis of the fundamental principles of deductive and inductive logic. Second half-year: a consideration of ethical problems in the light of the more important types of ethical theory. M W F 9:00 or 11:00

PHILOSOPHY 300. History of Philosophy. An historical survey of the essential features and main currents of philosophical thought, ancient, mediæval, and modern. T Th S 9:00

PHILOSOPHY 310. Types of Ethical Theory. A systematic and critical examination of some of the principal works of moral philosophy, and a study of the problem of moral value. T Th S 10:00

PHILOSOPHY 410. Theory of Knowledge. A close examination of past and present description of the cognitive processes, perceptual and conceptual, with emphasis on typical representative and presentative theories of knowledge. Prerequisite: one course in philosophy. M W F 10:00

PHILOSOPHY 440. The Nature of Evil. An historical study of the problem of evil in ancient and mediæval thought, followed by a criticism of the more significant pessimistic strains in modern philosophy, theology, and literature. Prerequisite: one course in philosophy. Th 2:00–5:00

PHILANTHROPY 300. Social Problems. An intensive treatment of the following topics: Child Welfare, Immigration, Recreation, Delinquency and Crime, Public Health, and Housing. This course aims to equip the student of

social activities as well as the prospective social worker with a knowledge of important types of social maladjustment. Prerequisites: Economics 200, one course in college History, Sociology 200. M W F 10:00

PHILANTHROPY 400. A course designed to train the student for professional social work. It includes the history of public and private relief, the functions of the more important social agencies, and the technique of social diagnosis and treatment. Theoretical instruction in the case method will be accompanied by field work under the direction of experts connected with the social agencies of the city of Houston. This course is limited to advanced students who are expecting to undertake professional social work. M W F 9:00

PHYSICAL TRAINING AND PHYSICAL EDUCATION

The equipment of the athletic Field House not only makes provision for the university athletic teams but also affords opportunity for systematic physical training on the part of other members of the institution. Facilities are available in or near the Field House for basket ball, football, track and field work, baseball, handball, tennis, golf, and other athletic and recreative games.

PHYSICAL TRAINING. All men entering the Institute for the first time are required to take a year's course in physical training.[1] This course, Physical Training 100, is also open to any other male student in the Institute. Students

[1]Effective September, 1930.

participating in intercollegiate athletics will receive appropriate credit for the duration of their participation. However, the required course offers a programme of games and intramural sports for those who are not competing in intercollegiate athletics but for whom the benefits of recreation, exercise, and athletic competition are also desirable. The activities of the course will be so organized as to utilize the play instinct as much as possible.

The certificate of medical examination required of a student on admission will determine in a large measure the character of the work that the individual student is permitted to take. In certain special cases, a supplementary physical examination may be required. In cases where the student is physically or organically unfit for a normal program of physical activity, he will be assigned to a restricted exercise group where special activities will be made to serve his needs. In all cases, the work will be so organized as to eliminate direct competition between the physically weaker and the physically stronger among the students.

For this physical training, a fee of $16, payable at registration time, is required, entitling the student during his residence as an undergraduate to the use of the Field House and playing fields, to the use of a complete gymnasium uniform (excepting only gymnasium shoes, which are also required), and towels, and to laundry service for the preceding items of equipment.

PHYSICAL TRAINING 100. This course is designed to teach the student skill in various forms of athletic and recreative games and contests. Required of all men in the Freshman class. Three hours each week. Hours to be arranged.

PHYSICAL EDUCATION. Beginning with the academic year 1929–30, the Rice Institute offers a four years' course in physical education, leading to the degree of Bachelor of Science in Physical Education. This course is designed with a view to preparing men for careers in physical education and coaching in high schools and colleges, municipal recreation departments, and other similar organizations. In each of its four years there is a required course in physical education, and in the last two years courses in education, making available a state teacher's certificate. The required work in biology and chemistry serves not only as a basis for the work in physical education, but also affords further subjects for high-school teaching. The laboratory work in these science courses is held in the morning hours, in order not to interfere with physical education laboratory work in the afternoons. Considerable emphasis is placed on economics and business administration for the benefit of those who ultimately, if not immediately, go into business. Students looking forward to medicine or law are permitted to make substitutions enabling them to meet the ordinary pre-medical and pre-legal requirements.

The schedule of the four years' course in Physical Education is as follows:

FIRST YEAR COURSE

(1) English 100
(2) French, German, or Spanish
(3) Chemistry 110
(4) Economics 100
(5) Physical Education 100

SECOND YEAR COURSE

(1) English 210
(2) French, German, or Spanish[1]
(3) Biology 100
(4) Business Administration 210
(5) Physical Education 200

THIRD YEAR COURSE

(1) Biology 290
(2) Physical Education 300[2]
(3–5) Three other subjects[3] .

FOURTH YEAR COURSE

(1) Biology 390
(2) Physical Education 400[2]
(3–5) Three other subjects[3]

PHYSICAL EDUCATION 100. Three lectures and six laboratory hours weekly. An introductory course to the professional study of physical education. The laboratory periods will be devoted to intensive instruction in a wide variety of games. T Th S 11:30

PHYSICAL EDUCATION 200. Three lectures and six laboratory hours weekly. This course deals with problems of health instruction, play-ground and community recreation,

[1] The language begun in the first year should be continued.
[2] Practice teaching must be completed during either the junior or senior year.
[3] Students planning to enter public school work should elect education in the third and fourth years and History 310 in the fourth year.

and the theory of athletic coaching. The laboratory periods will be devoted to intensive instruction in a wide variety of games. T Th S 9:00

PHYSICAL EDUCATION 300. Three lectures and six laboratory hours weekly. This course includes the study of body mechanics, individual gymnastics, and normal diagnosis, including the treatment and care of athletic injuries. The laboratory periods will be devoted to intensive instruction in a wide variety of games, and to practice teaching in physical education. M W F 9:00

PHYSICAL EDUCATION 400. Three lectures and six laboratory hours weekly. This course deals with the principles of organization and administration of programs of health and physical education. The laboratory periods will be devoted to intensive instruction in a wide variety of games, and to practice teaching in physical education.
T Th S 12:00

COURSES IN ENGINEERING

COURSES are offered in chemical, civil, electrical, and mechanical engineering. A complete course in any one of these branches extends over five years. A student who has successfully completed the first four years of a course is awarded the degree of Bachelor of Science in a specified branch of engineering, and after successfully completing the remaining year of his course he is awarded the degree of Ch.E., C.E., E.E., or M.E. Students with high standing may receive the M.S. degree in a specified branch

of engineering under the same requirements as for the M.A. degree. It is intended in the engineering courses to pay special attention to the theoretical side, because experience has shown that theoretical knowledge is difficult to obtain after leaving the university, and without it a rapid rise in the profession of engineering is almost impossible. It is recommended that students obtain employment in engineering work during the summer vacations, for it should be remembered that no amount of university work can take the place of practical experience in engineering establishments and in the field. The courses in engineering are not intended to take the place of learning by practical experience, but are designed to supply a knowledge of the fundamental principles and scientific methods on which the practice of engineering is based and without which it is difficult, if not impossible, to succeed in the practice of the profession. The work of the first year is alike for all branches, in order that students may defer choice of a particular engineering course as long as possible. It is necessary for chemical engineers to make this choice at the beginning of the second year, civil engineers at the beginning of the third year, and electrical and mechanical engineers at the beginning of the fourth year.

The work of the first two years consists chiefly of courses in pure and applied mathematics, physics, chemistry, and other subjects, an adequate knowledge of which is absolutely necessary before the more technical courses can be pursued with advantage. Technical work is begun in the third year with courses of a general character in mechanical engineering, civil engineering, and electrical

engineering, all three of these branches to be taken by all engineering students, with a slight change in schedule for those in chemical engineering. In the third year instruction of students in mechanical and electrical engineering is begun in shopwork. The classes in shopwork are intended to give familiarity with workshop methods. The object of these classes is not primarily to train students to become skilled mechanics, but to provide such knowledge of shop methods as is desirable for those who may be expected as engineers to design machinery, to employ mechanics, and to superintend manufacturing processes.

Students who can afford the time are recommended to devote three or four years to preliminary work instead of two, taking the B.A. at the end of four years and an engineering degree at the end of six or seven years. Students proposing to do this are advised to take a course devoted largely to mathematics, physics, and chemistry, or an honours course in either mathematics, physics, or chemistry. The subjects taken during the years of preparatory work must include those of the first two years in the general engineering course, which may be substituted for options in the academic course. The honours course in physics is strongly recommended for those who wish to become either electrical or mechanical engineers. Typical schedules permitting such combination courses will be furnished by the Registrar on request.

The following are the schedules for the five years' course leading to a bachelor's degree in four years and an engineering degree in five years:

First Year

(1) Mathematics 100
(2) Physics 100
(3) English 100
(4) Chemistry 100
(5) Engineering 110

Second Year

(1) Mathematics 200 or 210
(2) Mathematics 220[1]
(3) Physics 200
(4) French or Spanish[2]
(5) Engineering 210[3]

Third Year

MECHANICAL ENGINEERING AND ELECTRICAL ENGINEERING

(1) Mathematics 300
(2) Mechanical Engineering 300
(3) Electrical Engineering 300
(4) Civil Engineering 300
(5) Mechanical Engineering 310

CIVIL ENGINEERING

(1) Mathematics 300
(2) Mechanical Engineering 300
(3) Electrical Engineering 300
(4) Civil Engineering 300
(5) Civil Engineering 310

[1] Chemical Engineers take Chemistry 220.
[2] Chemical Engineers take German 100, other Engineers may substitute Chemistry 200.
[3] Chemical Engineers take Chemistry 230.

CHEMICAL ENGINEERING

(1) Chemistry 300. Organic Chemistry
(2) Chemistry 310. Physical Chemistry
(3) Mechanical Engineering 300
(4) Electrical Engineering 300
(5) Economics 200

Fourth Year

MECHANICAL ENGINEERING

(1) Mechanical Engineering Laboratory (M.E. 400)
(2) Machine Design (M.E. 410)
(3) Heat Engines (M.E. 420)
(4) Industrial Management (M.E. 430) or an approved Elective
(5) Internal Combustion Engines and Fuels (M.E. 440)
(6) Economics 200
(7) Seminar (Engineering 400)

ELECTRICAL ENGINEERING

(1) Alternating Currents (E.E. 400)
(2) Electrical Engineering Laboratory (E.E. 410)
(3) Approved Engineering Elective
(4) Industrial Management (M.E. 430) or an approved Elective
(5) Economics 200
(6) Seminar (Engineering 400)

CIVIL ENGINEERING

(1) Municipal Engineering (C.E. 420)
(2) Masonry Construction (C.E. 440)
(3) Graphic Statics and Structural Design (C.E. 450)
(4) An approved Elective
(5) Economics 200
(6) Seminar (Engineering 400)

CHEMICAL ENGINEERING

(1) Chemistry 410A. Colloid Chemistry
(2) Chemistry 420A. Electrochemistry
(3) Chemistry 430. Chemical Engineering
(4) Chemistry 480
(5) Civil Engineering 300
(6) Elective

Fifth Year

MECHANICAL ENGINEERING

(1) Advanced Machine Design (M.E. 500)
(2) Mechanical Plants and Processes (M.E. 510)
(3) Thesis (M.E. 530)
(4) Seminar (Engineering 400)
(5) Elective (approved by M.E. faculty)

ELECTRICAL ENGINEERING

(1) Advanced Alternating Currents (E.E. 500)
(2) Thesis (E.E. 510)
(3) Heat Engines (M.E. 420)
(4) Seminar (Engineering 400)
(5) Elective

CIVIL ENGINEERING

(1) Structural Design (C.E. 500)
(2) Hydraulic and Sanitary Engineering (C.E. 510)
(3) Railway Engineering (C.E. 520)
(4) Elective (Must be approved)
(5) Thesis (C.E. 530)

CHEMICAL ENGINEERING

(1) Chemistry 500
(2) Chemistry 530
(3) Elective (An advanced course in chemistry, physics, or mathematics)
(4) Engineering Elective
(5) Chemistry 580 (Chemistry Seminar)
(6) Engineering 400 (Engineering Seminar)

ENGINEERING 110. Mechanical Drawing and Descriptive Geometry. Mechanical Drawing: the use of drafting instruments; lettering; drawing figures in isometric, cabinet, and orthographic projection; intersections and developments. Descriptive Geometry: orthographic projections of points, lines, planes, warped surfaces, etc., in the four angles of projection. T Th S 8:00

Section 1: T and Th 1:30–4:30

Section 2: W and F 1:30–4:30

ENGINEERING 210. Kinematics of Machines, and Plane Surveying.

KINEMATICS. The study of relative motion of parts of machines, instant centers, velocities, gearing and wrapping connectors.

M W F 11:00 T F 2:00–5:00 (First half-year)

PLANE SURVEYING. The study of the uses and adjustments of surveying instruments and of office methods. Problems are given in field work to familiarize the student with chain, compass, level, and transit. Plotting and compilations from field notes. Prerequisites: Engineering 110 and Mathematics 100.

M W F 11:00 T F 2:00–5:00 (Last half-year)

ENGINEERING 400. A weekly meeting conducted by the fourth year engineering students for the discussion of current topics from the technical periodicals, and of scientific and technical papers of general engineering interest. This course must be taken during the year in which the student receives the B.S. degree. Open to others who have the necessary engineering background. F 2:00–5:00

MECHANICAL ENGINEERING 300. Elementary Heat Power. A general course of lectures, recitations from text, and laboratory covering the characteristics, fields of usefulness, operation, and tests of fuels, steam engines and turbines, boilers, pumps, condensers, and auxiliaries; properties of steam; valve gears; simple internal combustion engines and accessories. Numerous problems illustrate the theory discussed. Prerequisites: Physics and Chemistry 100, Mathematics 200 or 210. Laboratory fortnightly.

M W F 10:00 M or T 2:00–5:00

MECHANICAL ENGINEERING 310. Engineering Shop. Text-book and lectures dealing with metallurgy, general forge, foundry, welding, heat-treating, and machine-shop practice, and their effects on machine design, and manufacturing. Practice with a variety of bench and machine tools, carefully selected for their fitness in illustrating the principles studied, for affording actual contact with machine work, and for developing a certain degree of skill and resourcefulness in the student.

Recitations, all sections, T Th 9:00
Shop Section A: T Th 10:00–12:00 S 9:00–12:00
Shop Section B: Th F 1:30–5:00

MECHANICAL ENGINEERING 400. Senior Mechanical Laboratory. An advanced course in general steam, air, oil, water, and power-transmission machinery operation and testing. Recitations from text, reports, and laboratory. Prerequisite: Mechanical Engineering 300. Must be accompanied with or preceded by Mechanical Engineering 420. T W 2:00–5:00

MECHANICAL ENGINEERING 410. Machine Design. Recitations from text and references, also calculations and drafting involved in the design of machine parts, considering both the theory and its modifications due to shop practice and financial limitations. Design of several complete machines, such as punch presses and hoisting machines. Prerequisites: Engineering 210, Mechanical Engineering 310, Civil Engineering 300.

M W F 10:00–12:00

MECHANICAL ENGINEERING 420. Heat Engines. General thermodynamics; applications of thermodynamics to the design and operation of air compressors, steam engines and steam turbines; commercial forms of such machines, with special emphasis on steam turbines; elementary steam plant design; elementary refrigeration. Prerequisite: Mechanical Engineering 300. Lectures, text, and problems. M W F 9:00

MECHANICAL ENGINEERING 430. Industrial Management. A study of the principles and practice in the management of manufacturing plants; location and layout of works; organization of administration, sales, cost and production departments; selection of machinery, materials, and labor; wage system; cost analysis; welfare work; a short survey of the law of sales and contracts. Two recitations a week. Senior elective. T Th 9:00

MECHANICAL ENGINEERING 440. Internal Combustion Engines and Fuels. A study of the theory, design, and operation of internal combustion engines and gas producers. About one-third of the year is spent on engine design problems. Must be accompanied with or preceded by Mechanical Engineering 420. T Th S 8:00

MECHANICAL ENGINEERING 490. Mechanical Engineering Problems. If conditions are favorable, mechanical engineering students may elect at least nine hours a week in approved investigations or designs under the direction of a member of the staff.

MECHANICAL ENGINEERING 500. Advanced Machine Design. The investigation of elaborate complete ma-

chines; original design of complete machines, especially automatic machinery; design of mill-building trusses, floors, and structural details.

MECHANICAL ENGINEERING 510. Mechanical Plants and Processes. A general course dealing with special plants and processes, such as oil production, transportation, and refining, textiles, metal products, material handling, refrigeration, etc., not covered thoroughly in other courses. Details of design and operation of special power and heating plants. Prerequisite: Mechanical Engineering 420.

MECHANICAL ENGINEERING 530. Thesis. The investigation, under the Mechanical Engineering staff, of some undeveloped engineering problem, either through experiment, design, or compilation of available information. The time required will be at least that necessary for a standard advanced course. Two copies of the accepted report will be required for deposit in the Institute libraries.

ELECTRICAL ENGINEERING 300. The fundamental principles of dynamo machinery, both direct and alternating current. The course includes laboratory work, which as far as possible parallels the class-room work. Prerequisite: Physics 200 and Mathematics 200 or 210. Laboratory fortnightly. M W F 9:00 M or T 2:00–5:00

ELECTRICAL ENGINEERING 400. Generation, transmission, and utilization of alternating current power; characteristics and operation of alternating current generators and motors and of transformers; synchronous converters; brief treatment of electrical design. Prerequisite: Electrical Engineering 300. T Th S 10:00

ELECTRICAL ENGINEERING 410. Electrical Engineering Laboratory. A laboratory study of alternating current circuits, instruments and machines. Standard testing of direct and alternating current machinery. Prerequisite: Registration in Electrical Engineering 400.

T 12:00 W Th 2:00–5:00

ELECTRICAL ENGINEERING 420. Electrical Design. Design of machinery for direct and alternating current; calculation of characteristics. Open only to students who show capacity for design and who are registered in Electrical Engineering 400. M W F 9:00

ELECTRICAL ENGINEERING 430. Theoretical Electrical Engineering. A more complete mathematical treatment of alternating-current phenomena than is given in Electrical Engineering 400, covering such subjects as transmission lines, unbalanced polyphase systems, and transients. Open only to students registered in Electrical Engineering 400 who show capacity in mathematics and electrical theory. M W F 10:00

ELECTRICAL ENGINEERING 440. Electrical Communication. The principles of communication by telegraph and telephone over wires and by radio. Open only to students registered in both Electrical Engineering 400 and Electrical Engineering 410 who show aptitude for communication work. M W F 10:00

ELECTRICAL ENGINEERING 490. Electrical Engineering Problems. If conditions are favorable, students of electrical engineering may elect at least nine hours a week in

approved investigations, usually experimental, under the direction of a member of the staff. Hours to be arranged.

ELECTRICAL ENGINEERING 500. Advanced Alternating-current Theory. A continuation of Electrical Engineering 430 and Electrical Engineering 410. Attention will be given to special branches such as high voltage, high frequency, illumination, telephony, radio communication, etc. Three lectures and one laboratory period per week.

Hours to be arranged.

ELECTRICAL ENGINEERING 510. Thesis. A thorough report on an engineering investigation selected and carried out by the individual student. It is expected that a great deal of time will be given to thesis work. The course is considered the equivalent of a three-hour course.

CIVIL ENGINEERING 300. Strength of Materials and Hydraulics. Strength of Materials: a course given primarily for the study of the theory of beams, columns, and shafts. In the theory are considered stresses and deformations due to tensile, compressive and shearing forces; the distribution of shear, bending moments, deflections, combined stresses, and torsional stresses. Physical tests of steel, wrought iron, cast iron, wood, cement, and concrete are made in the laboratory. Hydraulics: a course devoted to the principles of hydrostatic and hydrodynamic pressures; the flow of water through orifices, pipes, nozzles, open channels, and over weirs. Prerequisites: Physics 100 and Mathematics 200. Laboratory fortnightly.

T Th S 8:00 M or T 2:00–5:00

CIVIL ENGINEERING 310. Topographic, Geodetic, and Railroad Surveying. In this course are given the theory and practice of base line and triangulation measurements, determination of meridian, traversing with transit and stadia and with a plane-table, and mapping. Simple, compound, reversed, vertical, and spiral easement railroad and highway curves. Computation of earth work. Prerequisite: Engineering 210. T Th 12:00 W Th 2:00–5:00

CIVIL ENGINEERING 420. Municipal Engineering. The course covers three subjects. Highways: design, construction and maintenance of earth, sand-clay, macadam, bituminous macadam, asphaltic concrete, brick, wood-block, stone-block, and cement concrete roads. Legislation and methods of financing. Water Supply: a study of rainfall, evaporation, yield, water bearing strata, etc. Water analysis and stream pollution. Design, construction, operation, and maintenance of purification systems, storage facilities, and distribution systems. Sewerage: a study of storm flow, modern methods of sanitation, disease epidemics, etc. Water carriage systems, separate and combined. Design, construction, and maintenance of sewers and sewage disposal plants. Prerequisite: Civil Engineering 300. M W F 8:00 Th 2:00–5:00

CIVIL ENGINEERING 440. Masonry Construction. A study of concrete and concrete aggregates. Theory and design of reinforced concrete slabs, beams, and columns. A study of foundations. Theory, investigation, and design of retaining walls, dams, and arches. Design of typical parts of buildings and beam and girder bridges. Prerequisite: Civil Engineering 300. T Th S 9:00 F 10:00–1:00

CIVIL ENGINEERING 450. Graphic Statics and Structural Design. Algebraic and graphic statics. Theory and design of simple roof trusses, bridge trusses, and plate girders. Detailed drawings and estimates of cost and weight. Prerequisite: Civil Engineering 300.

M W F 9:00 M W 10:00–1:00

CIVIL ENGINEERING 490. Civil Engineering Problems. Under certain favorable conditions civil engineering students may elect an approved investigation of some civil engineering problem under the direction of a member of the civil engineering staff. Hours to be arranged.

CIVIL ENGINEERING 500. Structural Design. Design of steel office and mill buildings. Analysis of stresses in statically indeterminate structures such as swing, cantilever, arch, and suspension bridges. A study of secondary stresses. Two lectures and one design period a week. Prerequisite: Civil Engineering 450 or its equivalent.

CIVIL ENGINEERING 510. Hydraulic and Sanitary Engineering. Investigation and development of water power. Design of dams and irrigating systems. Hydraulic turbines and pumps. Preliminary design for a water supply and sewerage system for a small city. Study of general sanitary problems including garbage disposal, public health, street cleaning, etc. Three lectures and one design period a week. Prerequisite: Civil Engineering 420 or its equivalent.

CIVIL ENGINEERING 520. Railway Engineering. A study of the principles of economic location and construction,

railway maintenance, railway structures. Design of terminals and signalling systems. Railway organization and valuation. Three lectures and one design period a week. Prerequisite: Civil Engineering 310 or its equivalent.

CIVIL ENGINEERING 530. Thesis. This will consist of an original investigation along some approved line of civil engineering work, an original design, or a critical review of existing work. In every case a complete typewritten or printed report will be required, and this will become the property of the Institute and be deposited in the general or departmental library.

COURSES IN ARCHITECTURE

To students of architecture the Institute offers a full course extending over five years, leading to a bachelor's degree at the end of the fourth year and to an architectural degree at the end of the fifth year. It is the purpose of the course in architecture to lead students during their residence to a comprehensive understanding of the art of building; to acquaint them with the history of architecture from early civilization to the present age; and to develop within them an understanding and appreciation of those conceptions of beauty and utility which are fundamental to the cultivation of ability in the art of design.

In arranging the courses which follow it will be observed that there are included certain indispensable elements of a liberal education and also such engineering and technical subjects as are becoming more and more necessary to the general education of a practising architect.

Of the more strictly architectural subjects, design is given by far the largest place. As a matter of fact, the courses in history and design and those in freehand drawing, in water color, in drawing from life, and in historic ornament have all a double object: to create in the student an appreciation of architectural refinement and dignity, and to increase constantly his ability to express conceptions of architectural form. Accordingly, the training of the student is not limited to training in draftsmanship alone, but all courses conspire to the cultivation of creative and constructive ability in expression and design. With a view to keeping the student in touch with the progress of his profession and with the daily routine and detail of its practice, it is strongly recommended that he spend a portion of each of his summer vacations in the office of some practising architect.

The following are the schedules for the five years' course leading to a bachelor's degree in four years and a degree in architecture in five years:

First Year

(1) Mathematics 100
(2) English 100
(3) French or Spanish
(4) Physics 100
(5) Architecture 100: consisting of
    (*a*) Elements of Architecture
    (*b*) Freehand Drawing

Second Year

(1) Pure Mathematics
(2) English
(3) French or Spanish[1]
(4) A Science
(5) Architecture 200: consisting of
    (*a*) Design
    (*b*) Freehand
    (*c*) History of Architecture

Third Year

(1) English
(2) Mathematics 220
(3) Architecture 300: Design
(4) Architecture 310: consisting of
    (*a*) Freehand Drawing
    (*b*) Water-Color
    (*c*) History of Architecture

Fourth Year

(1) English or History
(2) Architecture 400: Design
(3) Architecture 410: consisting of
    (*a*) History of Architecture
    (*b*) Freehand
(4) Architecture 430: Construction
(5) Architecture 440: consisting of
    (*a*) Historic Ornament
    (*b*) Water-Color

[1]Students in second year shall continue the language chosen in first year course.

Fifth Year

(1) Architecture 500: Thesis Design
(2) Architecture 520: Life Drawing and Water-Color
(3) Architecture 530: consisting of
(*a*) Construction
(*b*) Special Lectures
(4) Architecture 510 or 540

ARCHITECTURE 100.

(*a*) Elements of Architecture. Elementary training in drawing of order plates, wash drawings, lettering, with a series of lectures on descriptive geometry, shades and shadows, and perspective. Six hours a week.

M Th 1:30–4:30

(*b*) Freehand Drawing. Elementary drawing in pencil and charcoal of single simple objects and block groups and casts. Four hours a week. T S 11:00–1:00

ARCHITECTURE 200.

(*a*) Design. Rendered drawings embracing the design of simple elements of buildings, together with advanced work in the use of the orders and in composition. Six hours a week. T Th 2:30–5:30

(*b*) Freehand. Drawing in charcoal from simple casts of classical ornament. Four hours a week.

M F 11:00–1:00

(*c*) History of Architecture. Two lectures a week on the history of ancient architecture, illustrated by lantern slides, and two hours a week of research and tracing of historic buildings. Four hours a week. T Th 1:30–3:30

ARCHITECTURE 300.

Design. The design of small buildings. The problems average five weeks in duration with twenty-four hours for the sketch problems at the end of major problems. Nine hours a week. M W F 1:30–4:30

ARCHITECTURE 310.

(*a*) Freehand Drawing. Drawing from casts of antique sculpture. Four hours a week. M F 8:30–10:30

(*b*) Water-Color. Elementary training in color drawing and simple groups of still life. Two hours a week.
W 8:00–10:00

(*c*) History of Architecture. Two lectures a week in the history of mediæval architecture, illustrated by lantern slides, and two hours a week of research in the study of historic buildings. Four hours a week. T Th 2:30–4:30

ARCHITECTURE 400.

Design. The design of public buildings and groups of buildings. The problems average six weeks in duration, alternating with twelve-hour sketch problems. Twelve hours a week. T 1:30–5:30 M W Th F 3:30–5:30

ARCHITECTURE 410.

(*a*) History of Architecture. Two lectures a week on the history of modern architecture. M F 1:30–2:30

(*b*) Freehand. Drawing from casts of full figure and group, antique sculpture. Four hours a week.
M F 9:00–11:00

ARCHITECTURE 430.

Methods of Construction. Three lectures a week on materials and construction, with one plate a week.

M W F 2:30–3:30

ARCHITECTURE 440.

(*a*) Historic Ornament. The study of the history of ornament, with a series of design plates in ornament from historic periods of architecture. Six hours a week.

T Th S 8:00–10:00

(*b*) Water-Color. Water-color drawing and sketching in color, work advanced, subjects varied. Two hours a week.

W 9:00–11:00

ARCHITECTURE 500.

Thesis Design. The problem of a thesis may consist of a single building or group of buildings, and must include large-scale studies as well as general drawings. The student may select his own problem, but his entire programme is subject to the approval of the instructors in design. Twenty hours a week.

M W F 8:00–12:00 T Th 1:30–5:30

ARCHITECTURE 510.

History of Painting and Sculpture. Three lectures a week on history of painting and sculpture. A critical survey of historic schools of painting and sculpture. Open to Juniors and Seniors taking the academic course.

T Th S 11:00

ARCHITECTURE 520.

Life Drawing and Water-Color. Rendered architectural details and measured drawings in color. Four hours.

T Th 9:00–11:00

ARCHITECTURE 530.

(*a*) Construction. Two lectures a week on mechanics of construction, with one construction plate a week. Hours to be arranged.

(*b*) Special Lectures. Lectures on the professional practice of architecture, including the business relations of architect with client and contractor. One lecture a week.

ARCHITECTURE 540. A History of Painting and Sculpture of the Italian Renaissance. A critical survey of the art of the Renaissance, its origins and subsequent development from the beginning of the thirteenth until the close of the seventeenth centuries, with particular emphasis upon the period between the years 1400 and 1592. Open to Juniors and Seniors taking the academic course. (Not offered 1931–32. See Architecture 510.)

UNIVERSITY EXTENSION LECTURES

To bring the people of the city and community into more intimate touch with the academic life of the university, and to carry the influence of that life directly to many homes not represented on the rolls of its undergraduate or post-graduate students, regular series of public lectures, in the form of university extension lectures, are offered without matriculation fee or other form of admission requirement. These performances are authoritative in character, but as non-technical and popular in treatment as their subjects will permit. From domains of literature, history, science, art, philosophy, and politics, subjects of current interest as well as those of assured and permanent value

are chosen. The original plan for these university extension lectures consisted in giving each academic year two regular series of thirty-six lectures each on Mondays, Wednesdays, and Fridays, from the middle of November to the middle of February, the second series running similarly from the middle of February to the middle of May; all these lectures are delivered in the lecture halls and amphitheaters of the Institute, each afternoon lecture beginning promptly at 4:30 and closing not later than 5:30. The Rice Institute Pamphlet for January, 1918, contains a detailed record of the university extension lectures delivered at the Institute during the academic years 1913–14 to 1917–18, inclusive. These performances were partially interrupted during the war, but have been resumed under some modifications of the original plan as to time and place.

PUBLIC LECTURESHIPS

THREE public lectureships have been founded at the Rice Institute. The first of these, established in 1918 by Mrs. Estelle B. Sharp, of Houston, has to do primarily with topics in the social sciences; the second, founded in 1919 by Herbert Godwin, Esq., of Houston, is to be devoted initially to subjects of public concern during the period of reconstruction; while the third, founded anonymously in 1922 by a citizen of Houston, is dedicated to the promotion of interest in music both in the university and in the community. The Sharp Lectureship was inaugurated in the autumn of 1918 by a course of lectures on "The Obligations and Privileges of Citizenship—a plea for the study of social science," by the late Sir Henry Jones, F.B.A.,

professor in the University of Glasgow. Subsequent lectures on the Sharp Foundation have been delivered by Professor Andrew Cunningham McLaughlin, of the University of Chicago and Dr. Terrot Reaveley Glover, of Cambridge University. The Godwin Lectureship was inaugurated in the spring of 1920 by lectures on "The Conservation of the Institutions of the Republic," and "World-wide Coöperation among the Nations," by the Hon. William Howard Taft, twenty-seventh President of the United States of America. Further lectures on the Godwin Foundation have been delivered by Sir Auckland Geddes, the British Ambassador to the United States, and by President A. Lawrence Lowell, of Harvard University. The Lectureship in Music was inaugurated in the spring of 1923 by a course of lectures on music in the life of the community and of the nation, delivered by Mr. John Powell, the American composer and pianist; the Lectureship in Music has also been held by Mlle. Nadia Boulanger, of Paris, by Sir Henry Hadow, Vice-Chancellor of the University of Sheffield, and by MM. Maurice Ravel and A. Honegger of Paris.

THE RICE INSTITUTE PUBLICATIONS

Among the publications of the Rice Institute are at present included the Announcements, the Descriptive Brochure, the Programmes of University Extension Lectures, and the Rice Institute Pamphlet. The first three of these have appeared at intervals and in several editions; the Pamphlet, now in its eighteenth volume, is published quarterly in January, April, July, and October, with a view to giving

wider publicity in permanent form to inaugural and other lectures in letters, science, and art by resident and visiting lecturers and professors of the University. In this connection the reader may wish to turn to the paragraph of this Announcement concerning the formal opening of the Institute.

LIBRARY

TEMPORARY quarters for the Library of the Institute have been provided in the Administration Building. The affairs of the Library are administered through a committee of the Faculty and Miss Alice C. Dean, M.A., is Acting Librarian. In providing the initial equipment of the Library the policy is being followed of supplying such books as are necessary to supplement the courses of instruction and to support the independent investigations of members of the Faculty and advanced students. In this manner a high degree of efficiency becomes possible in the early years of the Library's existence. Moreover, for works of general and more popular interest the shelves of the Houston Public Library are accessible to all members of the Institute.

Besides several hundred current literary and scientific journals, the Library of the Institute contains at present about thirty thousand volumes in back files of serial publications; among these sets the following are complete: Abstracts of Bacteriology, L'Académie des Sciences de Paris Comptes Rendus, Acta Mathematica, Allgemeine Deutsche Biographie, American Academy of Political Science Annals, American Anthropologist (New Series), American Economic Review, American Chemical Society

Journal, American Electric Railway Engineering Association Proceedings, American Electro-Chemical Society Transactions, American Historical Association Annual Reports, American Historical Review, American Institute of Chemical Engineers Transactions, American Institute of Electrical Engineers Transactions, American Institute of Mining and Metallurgical Engineers Transactions, American Journal of Education, American Journal of International Law, American Journal of Mathematics, American Journal of Philology, American Journal of Psychology, American Journal of Science, American Machinist, American Mathematical Monthly, American Mathematical Society Transactions and Bulletin, American Naturalist, American Political Science Review, American Quarterly Review, American Review of Reviews, American Society for Testing Materials Proceedings, American Society of Civil Engineers Transactions, American Society of Mechanical Engineers Transactions, American State Papers, Anglia, Annali di Matematica, Annalen der Chemie, Annalen der Physik, Annales de Chimie et de Physique, Annals of Mathematics, L'Année Psychologique, Annual Register, Antologia, Architectural Record, Archiv des Criminalrechts, Archiv für die Gesamte Psychologie, Archiv für Entwickelungsmechanik der Organismen, Archiv für Geschichte der Philosophie, Archiv für Protistenkunde, Archiv für Zellforschung, Archives Néerlandaises des Sciences Exactes et Naturelles, Archives of Pathology and Laboratory Medicine, Aristotelian Society Proceedings, L'Art d'Aujourd'hui, Arts and Decoration, Astrophysical Journal, Atlantic Monthly, Bangor Historical Magazine, Baptist Quarterly, Behavior Monographs, Beitrage zur

Geophysik, Bibliographical Society (London) Transactions, Bibliotheca Belgica, Biochemische Zeitschrift, Blackwood's Edinburgh Magazine, Bookman, Le Botaniste, British Academy Proceedings, British Association for the Advancement of Science Reports, Bulletin of Entomological Research, California University Publications in History, California University Publications in Zoology, Camden Society Publications, Carnegie Institution of Washington Publications, Centralblatt für Bakteriologie, Chemical Abstracts, Chemical Engineer, Chemical News, Chemisches Zentralblatt, Church Quarterly Review, Circolo Matematico di Palermo Rendiconti, Civiltá Catolica, Classical Philology, Comparative Psychology Monographs, Corpus Juris, La Critica, Current History Magazine, Deutsche Chemische Gesellschaft Berichte, L'École Normale Supérieure Annales Scientifiques, L'Éclairage Électrique, Ecology, Edinburgh Review, Educational Administration and Supervision, Educational Review, Electric Journal, Electrical World, Electrician, Engineering Index Annual, Engineering News-Record, L'Enseignement Mathématique, Englische Studien, Ergebnisse der Anatomie und Entwickelungsgeschichte, Experiment Station Record, Filosofia delle Scuole Italiane, Fortschritte der Mathematik, Forum, Genetic Psychology Monographs, Gentlemen's Magazine, Giornali di Matematiche di Battaglini, Great Britain Royal Commission Historical Manuscripts, Green Bag, Harper's Monthly Magazine, Harvard Graduates' Magazine, Harvard Law Review, Harvard Studies and Notes in Philology and Literature, Harvard Theological Review, Hibbert Journal, Industrial Management, Institution of Electrical Engineers Journal, L'Intermédiaire des Mathé-

maticiens, International Journal of Ethics, International Monthly Magazine of Literature, Science and Art, International Studio, Jahrbuch der Radioaktivität und Elektronik, Jefferson Physical Laboratory Contributions, Journal de Chimie Physique, Journal de Mathématiques, Journal de Physique, Journal für Praktische Chemie, Journal of American Folklore, Journal of Animal Behavior, Journal of Bacteriology, Journal of Comparative Psychology, Journal of Economic Entomology, Journal of Experimental Medicine, Journal of Experimental Psychology, Journal of General Psychology, Journal of Helminthology, Journal of Industrial and Engineering Chemistry, Journal of Immunology, Journal of Hellenic Studies, Journal of Medical Research, Journal of Parasitology, Journal of Philology, Journal of Philosophy, Psychology and Scientific Methods, Journal of Physical Chemistry, Journal of Speculative Philosophy, Journal of the Society of Chemical Engineers, K. Akademie van wetenschappen te Amsterdam Proceedings, Larousse Mensuel, Das Literarische Echo, Literary and Theological Review, London Mathematical Society Proceedings, La Lumière Électrique, Mathematische Annalen, Mathematische Zeitschrift, Metallurgical and Chemical Engineering, Millard's Review, Mind, Mississippi Historical Society Publications, Mississippi Valley Historical Association Proceedings and Review, Modern Language Review, Modern Philology, Monatshefte für Mathematik und Physik, Monist, Monthly Anthology and Boston Review, Monumenta Germaniae Historica, Municipal Affairs, Nation, National Electric Light Association Bulletin (New Series), National Municipal Review, National Society for the Study of Education

Yearbooks, Nature, Die Naturwissenschaften, Neudrucke Deutscher Literaturwerke, New England Magazine, New Republic, New York Times Index, Niederländisches Archiv für Zoologie, Niles' Weekly Register, Nineteenth Century, Notes and Queries, Novitates Zoologicae, Nuovo Cimento, Ohio Archæological and Historical Publications, Oregon Historical Society Quarterly, Outing, Palaestra, Pedagogical Seminary, Percy Society Publications, Philosophical Magazine and Journal of Science, Philosophical Review, Philosophie Positive, Philosophische Monatshefte, Physical Review, Physiological Abstracts, Physikalische Zeitschrift, Political Science Quarterly, Power, Print Collectors' Quarterly, Psychological Abstracts, Psychological Bulletin, Psychological Index, Psychologische Forschung, Punch, Quarterly Journal of Microscopical Science, Quarterly Journal of Pure and Applied Mathematics, Quarterly Review, R. Accademia dei Lincei Rendiconti, R. Accademia delle Scienze Fisiche e Matematiche (Naples) Atti, R. Accademia di Scienze Morali e Politiche (Naples) Atti, R. Accademia di Scienze, Lettere ed Arti (Padua) Atti (Nuova Seri), R. Accademia Lucchese d Scienze, Lettere ed Arti Atti, R. Scuola Normale Superiore (Pisa) Annali, Review of Applied Entomology, Series B, Revue de Paris, Revue de Philosophie, Revue de Synthese Historique, Revue des Deux Mondes, Revue Générale de l'Électricité, Revue Historique, Revue Occidentale Philosophique Sociale et Politique, Revue Philosophique de la France et de l'Etranger, Revue Politique et Parlementaire, Revue Semestrielle des Publications Mathématiques, Romanic Review, Royal Historical Society Transactions, Royal Microscopical Society Journal, Royal Society of London

Philosophical Transactions and Proceedings, Royal Society of Tropical Medicine and Hygiene, School and Society, Science Abstracts, Scientific Monthly, Scottish Text Society Publications, Select Journal of Foreign Periodical Literature, Shakespeare Jahrbuch, Société Mathématique de France Bulletin, Société Chimique de France Bulletin, Société de Pathologie Exotique (West Africa) Bulletin, Social Hygiene, Society for the Promotion of Engineering Education Proceedings, Society of Chemical Industry Journal, Southwestern Historical Quarterly, Southwestern Political and Social Science Quarterly, Southwestern Reporter, Strand Magazine, Studien zur Englischen Philologie, Studien zur vergleichenden Literaturgeschichte, Studio, Texas Supreme Court Reports, The Times Weekly (London), United States Supreme Court Reports, Unpopular Review, Vierteljahrsschrift für Wissenschaftliche Philosophie und Soziologie, Washington Academy of Sciences Journal, World's Work, Yale Review (New Series), Yellow Book, Zeitschrift der Savigny-Stiftung für Rechtsgeschichte, Zeitschrift für Analytische Chemie, Zeitschrift für Angewandte Chemie, Zeitschrift für Anorganische Chemie, Zeitschrift für Elektrochemie, Zeitschrift für Exacte Philosophie, Zeitschrift für Physikalische Chemie, Zeitschrift für Psychologie und Physiologie der Sinnesorgane, Zeitschrift für Wissenschaftliche Photographie, Zoological Record, Zoological Society of London Proceedings, Zoologischer Anzeiger, Zoologischer Jahresbericht.

LABORATORY INSTALLATION

THE physics laboratories are located on the north side of the academic court, adjoining the administration building, and are connected with the latter by a continuation of the original cloister. The buildings are constructed of brick and marble, corresponding in design to the style as defined in the administration building, but of a simpler character expressing their purpose as laboratories. The physics laboratory proper is a two-story building 275×56 feet, connected with a large lecture amphitheater 121×72 feet. The main building contains four large students' laboratories, two lecture rooms equipped for giving illustrated lectures, and four research rooms, two dark rooms, a library reading room, and administrative offices. The principal room of the amphitheater wing is a large lecture hall with seating capacity for about four hundred auditors. The room is fully equipped for giving illustrated lectures and is arranged with seats properly elevated to command a 28-foot lecture table which is supplied with gas, hot and cold water, compressed air, vacuum, and direct and alternating electric currents. In this wing also are six rooms fitted for research work in physics, a battery room in which a battery of 100 Edison storage cells of 300 ampere-hours' capacity has been installed with space provided for another equal battery, a switchboard room where the wires from the battery can be connected in any desired manner for use in the laboratories, motor generators for charging the batteries and supplying direct current to the lecture rooms and laboratories, a vacuum pump, liquid air plant, constant temperature rooms, a preparation room, a large dark room, a fully

equipped workshop and a students' workshop. The floor of the workshop is supported free from contact with the surrounding walls so that vibration from the machines does not affect the building. Elevators for moving heavy apparatus are provided, and all laboratories, lecture rooms, and research rooms are equipped with individual service, for the students, of gas, water, steam, compressed air, vacuum, and both direct and alternating currents of electricity. The laboratory now contains a fine collection of modern apparatus suitable for teaching and research work in all branches of physics. This collection includes about seventy ammeters and voltmeters of all types, including a Kelvin gauge reading up to 30,000 volts and standard Weston instruments. About fifty resistance boxes of all kinds are also provided, and numerous galvanometers, electrometers, and electroscopes of various types. High potential batteries and generators are available for research work. A large Weiss electromagnet, a large Pye magnet, a Leeds and Northrup Potentiometer, and complete equipment for the accurate measurement of the conductivity of solutions, a precision electric wave meter and precision air condenser, may be specially mentioned among the other electrical instruments. The optical instruments include a Hilger's wave length spectrometer, monochromatic illuminator, spectrophotometer, and quartz spectrograph; also a set of interferometers of various types. Several modern X-ray generators are available for research work. For work in heat, electrical furnaces, various types of radiation pyrometers, resistance thermometers, and standard thermocouples are available. An Eotvos torsion balance machine of the most improved pattern for geophysical work has

lately been installed. This machine, valued at $10,000, is the gift of Mr. Robert McM. Gillespie of New York City. The apparatus for general work includes several Gaede and diffusion pumps; also standards of weight, length, etc. The collection of apparatus for illustrating lectures is exceptionally complete. An instrument maker and a glass blower are employed in the construction of special apparatus for research work. The department library contains all important text books, works of reference and complete sets of journals.

The laboratories for chemistry are housed in a three-story building of maximum rectangular dimensions of 307 and 181 feet, with ample attic and basement accommodations, built around several open courts, facing the South. Of brick and stone, steel and concrete construction, the building embodies the prevailing architectural beauty and simplicity of technical plan exhibited in the earlier science laboratories of Rice. Provision is made for adequately equipped, separate laboratories both for research and instruction in the half dozen major branches of chemistry, with an even larger number of smaller laboratories for corresponding work in the more highly specialized subjects of the science. In all the laboratories there is an abundance of natural light, while an elaborate system of artificial ventilation removes all fumes through a central draft tower, so designed as to constitute of itself one of the architectural features of the building. Careful consideration has been given both to the anticipated growth of the institution and the normal development of the department. The plans thus studiously prepared may bear comparison with those of extensive

establishments erected recently at other universities and scientific centres of the country. The department is well equipped with modern apparatus and materials for research and for lecture room and laboratory work in inorganic, organic, analytical, physical, colloid, electro-, bio-, and industrial chemistry. Some of the more special apparatus includes a General Electric X-ray diffraction apparatus, a Hilger X-ray spectrograph, Zeiss auto collimating spectrograph, Zeiss and Bausch and Lomb ultramicroscope outfits, Zeiss interferometer refractometer, Leitz micro- and macro-motion photographic outfit, complete facilities for developing and projecting motion pictures, Reichert metallographic microscope, quadrant electrometer, Leeds and Northrup type K potentiometer, Sharples supercentrifuge, porcelain basket type centrifuge, a specially designed thermostat for precise solubility determinations over wide temperature ranges, Pregl micro-combustion outfit, basal metabolism apparatus, experimental double effect Swenson evaporator with vertical and horizontal effects, Buflovak standard vacuum shelf drier, Sperry plate and frame and Kelly filter presses, complete Sturtevant equipment for crushing and grinding including jaw, roll, and disc type crushers, etc. Each laboratory room is equipped with the necessary conveniences, such as water, gas, alternating and direct current, air blast, hoods, suction pumps, etc. The lecture rooms are suitably arranged for the illustration of lectures by experiment and lantern projection. In the department library will be found the more important journals, works of reference, and standard text-books on the different branches of chemistry. These books and periodicals are accessible to all students.

The department of biology is for the present situated in the west end of the main wing of the physics laboratories. It has laboratories capable of seating one hundred and fifty students; lecture rooms with lantern for microscopic and other forms of projection; research rooms, preparators' room, store rooms, etc. Undergraduate courses of cultural nature are offered for academic students, and more technical courses for pre-medical and physical education students. Laboratory work is available in almost all of the courses, and modern and fully equipped microscopes are provided. Facilities are available for advanced research work in such subjects as parasitology, bacteriology, entomology, physiology, and genetics. The department is also equipped with an extensive series of specimens, casts, and charts for the study of zoölogy. Binocular microscopes, microtomes of various kinds, thermostats, embedding baths, and considerable accessory equipment, including physiological apparatus, are available for research work. Most of the important current zoölogical periodicals are to be found in the library.

The psychological laboratory at present occupies six rooms on the first floor of the chemical laboratory adjoining the large lecture hall of that building. The equipment consists of the apparatus necessary for the laboratory exercises and demonstrations in an advanced course in human experimental psychology. A number of instruments suitable for research are available, and more apparatus is being added for research as needed. A large dark room is provided for experiments on vision.

The department of architecture is located on the second floor of the chemistry laboratory, and is equipped with

large general drafting rooms modern in all their appointments, and a large studio for freehand drawing and water-color. A working library of architecture adjoins the drafting room and is equipped with the standard architectural publications; current files of architectural periodicals; plates, photographs, and lantern slides. The freehand studio is well equipped with plaster casts from the antique, and of historic ornament. The department also possesses models for elementary instruction in the orders, and models for the teaching of construction.

The drafting rooms for instruction in engineering drawing are located in the mechanical laboratory building. These rooms are equipped with drawing tables, lockers, and racks in such number that all students may work independently. Special equipment includes blue printing machines, universal drafting machines, parallel attachments, folding and rolling parallel rules, ellipsographs, beam compasses, section liners, and an elaborate set of Olivier models including the war mast, hyperbolic paraboloid, elliptical and conchoidal hyperboloid, conoid, groined, and cloistered arch, intersecting cylinders, raccording warped surface, and corne de vache.

The civil engineering laboratory is fully equipped with the usual surveying instruments, transits, levels, compasses, traverse tables and plane-tables, all of standard American makes. These include C. L. Berger and Sons, Buff and Buff, W. and L. E. Gurley, Bausch and Lomb, Keuffel and Esser, Eugene Dietzgen and Company, William Ainsworth and Sons, and the A. Lietz Company. There is also a large assortment of the necessary auxiliary equipment such as tapes, rods, range poles, etc. The drafting room is fully

equipped with instruments not required by each individual student, such as planimeters, protractors, special slide-rules, military sketching boards, railroad curves and irregular curves consisting of splines and weights, and calculating machines. The materials testing laboratory of this department is equipped with one 50,000 pound Riehle universal machine; one Olsen 15,000 pound universal machine; one 100,000 pound Olsen universal machine; one 200,000 pound Olsen universal machine; and one 60,000 inch-pound Riehle torsion machine; a Riehle standard paving brick rattler; a Riehle two-gang Deval abrasion machine; a Bureau of Standards flow table; suitable equipment for tension tests of belting; also an Olsen-Boyd 1000 pound automatic briquette testing machine; a Tyler Ro-tap testing sieve shaker, and the necessary auxiliary apparatus for making the usual tests. All of these machines except the cement testing machine are operated by directly connected individual motors so as to avoid all shafting and belting. The hydraulics laboratory is equipped with a Worthington 200 gallon per minute, 100 ft. head volute centrifugal pump with a direct connected slip ring motor; a simplex Venturi meter; trapezoidal, triangular, and rectangular weirs; a Pelton-Doble impulse turbine; a Gould ram; storage reservoir; overhead calibrated tank; and necessary gauges and other usual equipment. It is planned to add from time to time such additional equipment as is necessary for tests by advanced students and for research.

The equipment of the electrical engineering laboratory is ample for a thorough study of direct and alternating current circuits and machines. All the common types are represented and some of the less usual. In some of the

types, older machines may be compared with the more modern and the trend of development noted. There are examples of the practice of each of the leading manufacturers, including Crocker-Wheeler, Holtzer-Cabot, Roth, Sprague, Western Electric, General Electric, Westinghouse, Wagner, Robbins and Myers, Commercial, Electric Manufacturing Company, Fairbanks-Morse, Kuhlman Electric, Pittsburgh Transformer, Roller-Smith, Condit, Cutter, Cutler-Hammer, Ward-Leonard, Jewell, Biddle, Leeds-Northrup, and Weston. Among the direct current machines are generators rated: 50 kilowatts 250 volts; 35 kilowatts 250/125 volts (three wire); two alike, 5 kilowatts 125 volts, for parallel operation either flat- or over-compound; 5 kilowatts 110 volts; 4½ kilowatts 125 volts flat-compound; 3½ kilowatts 125 volts flat-compound; 1 kilowatt 500 volts; 4 kilowatts 125 volts (500 amperes) with Tirrill regular; 1½ kilowatts 2000/1200/800 volts; a set of three direct-connected machines for 90/150 and 20/25 volts direct current and 90/110 volts three-phase 170/250 cycle alternating current; and motors rated: 25 horse-power 250 volts (compound); 5 horse-power 500 volts (old type); two alike, 13 horse-power 230 volts; 10 horse-power, 7½ horse-power, 2 horse-power, all shunt wound for 230 volts; 3 horse-power 230 volts, variable speed; 4 horse-power 220 volts, series. The alternating current equipment includes: two phase-displacement sets, one consisting of two identical 7½ kilovolt-ampere, 220 volt, 1-2-3-6 phase synchronous generators, with shifting stators, which may be direct connected or operated without mechanical connection, the other similar, except that the generators are 15 kilovolt-ampere and one is mounted for

use as a cradle dynamometer; a 5 kilovolt-ampere 220 volt 3-phase synchronous generator with distributed field (round rotor); a 4 kilovolt-ampere 3-phase 110 volt 200 cycle generator; a 7½ horse-power 3-phase squirrel cage induction motor; a 5 horse-power 3-phase slip ring induction motor with controller; another of the same rating with starter; a 10 horse-power induction motor with internal starting resistance; a 7½ horse-power Fynn-Weichsel 3-phase motor; a 7½ horse-power unity power factor single-phase motor; a 50 horse-power induction motor with internal starting resistance; a 50 kilovolt-ampere synchronous motor; three 2 kilovolt-ampere and six 3 kilovolt-ampere 110/220: 110/220 volt transformers; two 3 kilovolt-ampere 460/230: 230/115 volt 3-phase transformers of the shell type; six 5 kilovolt-ampere 110/220 volt transformers with taps for Scott and other connections. Of particular interest are: a 25 horse-power 250 volt cradle dynamometer; a dynamotor operated from a 110 volt direct current supply and delivering 18 amperes at 110 volts 500 cycles; two synchronous converters or double current generators, one compound wound and with commutating fields, rated 10 kilowatts 250 volts direct current 1-3-4-6 phase, the other of the split or regulating pole type, rated 8 kilowatts 110 volts 1-3-4 phase; a set consisting of two direct connected induction motors, one 10 horse-power 1200 rev. per min. slip ring type, the other 5/10 horse-power 600/1200 rev. per min. squirrel cage type, for cascade operation at several speeds; three 220 volt 3-phase induction regulators for raising or lowering voltage 100 per cent, of 15, 13 and 10 kilovolt-ampere capacity, respectively; a 1 kilovolt-ampere 20 volt phase

advancer; a 3 kilovolt-ampere 30,000 volt oil testing transformer; an oscillograph equipped for taking either rectangular or circular records. Miscellaneous apparatus includes: condensers for power-factor correction; reactances, both air and iron core; rheostats; and starting devices. Meters are available for making any reading likely to be needed and include voltmeters (a. c. and d. c.), ammeters (a. c. and d. c.), wattmeters (single-phase and polyphase), current and voltage transformers, power-factor meters, frequency meters, watt-hour meters, tachometers, and a synchronoscope. For checking and calibrating these instruments there is an assortment of precision instruments, including a potentiometer and laboratory standards.

The mechanical engineering laboratory equipment falls into six general classes: steam, internal combustion, hydraulic, air, refrigeration, fuel and lubricants testing machinery. The first class contains an 8×18 Murray-Corliss engine equipped with rope brake; a 7×7 vertical Wachs slide-valve engine with Stephenson reversing gear, a 6 × 7 Troy engine, and a 7 × 10 horizontal slide-valve engine, all with Prony brakes; a 6 × 4 × 6 duplex boiler feed pump; a 20 kilowatt direct current De Laval turbo-generator set, nozzled for condensing and non-condensing operation and fitted with a brake-pulley which may be substituted for the generator; a 16 horse-power Lee impulse turbine driving a centrifugal pump; a steam turbine nozzle arranged for experimental work; a similar equipment for calibration of steam orifices; a Westinghouse locomotive type air-compressor arranged for economy test; a demonstration set-up of standard air-brake equipment; an air-lift pump model; a 205 cubic foot Ingersoll-Rand 2 stage steam

driven air compressor; and a 6×10×6 vertical compound Sturtevant engine. The machines are piped to exhaust either into the power-house stack or into three Wheeler surface condensers served by circulating and wet vacuum pumps.

Internal combustion engines are represented by a 20 horse-power fuel oil engine (Chicago Pneumatic Tool Co.); a 15 horse-power Foos oil engine equipped with two types of governors giving opportunity for engine tests using either gas, kerosene, or gasoline as fuel; a 3 horse-power Mietz and Weiss two-stroke cycle unit; a 3 horse-power Novo gasoline engine; Hall-Scott, Lawrance, Union, and Wright aeronautical engines; Chrysler, Maxwell, Chevrolet, and Willys-Knight automobile engines; and a Ford automobile engine with water-brake load. High-speed automobile and aeroplane engines are tested with a 100 horse-power Sprague cradle dynamometer equipped with slotted bed-plate, gasoline metering device, and adjustable engine supports. A Hopkinson optical indicator with photographic attachment is also provided. The refrigerating equipment includes a motor-driven 3-ton York compression machine with double-tube condenser, shell brine-cooler, brine-heater, and brine-pump. The hydraulic machinery consists of a 3-inch centrifugal pump and a 4×6 triplex pump, both driven by variable speed d.c. motor; an Evinrude centrifugal pump direct-connected to a gasoline engine; a steam turbine driven 200 g.p.m. two stage centrifugal boiler-feed pump; a calibrated overhead tank; a concrete storage cistern; four Venturi meters; a single tube manometer; a steam pulsometer; two weir boxes and notches; orifices, water meters, weighing tanks and scales,

gauges, and the usual small accessories. In a separate fuel laboratory room is the equipment for testing fuels and oils. It includes complete Atwater and Parr coal-calorimeter outfits; analytical balances; two types of Orsat flue-gas apparatus; Scott and Saybolt viscosimeters; a Thurston coefficient of friction machine; Bureau of Mines and Cleveland flash point testers; Conradson carbon residue equipment; hydrometers and specific gravity apparatus; a Junker type gas calorimeter; platinum ware, drying oven, ball mill, etc. Boiler tests are made on a 20 horse-power vertical fire tube boiler equipped with the necessary pumps and weighing equipment. Tests of heat-treated steel may be made with the aid of the several electric and gas furnaces, pyrometers of electric, expansion, optical, potentiometer, and gas pressure types, scleroscope, Rockwell, and Brinnel ball machines. A metallurgical microscope with specimen grinders, camera, and the usual accessories is also available.

In addition, the laboratories contain a Sirocco blower driven by calibrated motor, a plate blower, Pitot tubes, orifices, air Venturi meter, large and small gas meters, anemometers, injectors, dead weight pressure gauge testers, mechanical stroboscope, thermometer calibration apparatus, hoists, tachometers, steam calorimeters, the most popular gas and steam engine indicators, planimeters, standard gauges and thermometers. For class-room demonstrations, a Cussons valve-setting model, an automobile engine, several dozen sectioned models of intricate machines, and a collection of lantern slides, blue-prints, and curves are available.

A standard moving-picture machine permits the exhibition of the many films now loaned by manufacturers of engineering equipment.

The machine shop contains machine tools of quite varied character, each selected for its peculiar fitness to illustrate the principles and common details of modern shop tools and methods. The lathe equipment consists of twelve machines: one 14×8 Le Blond cone-head lathe with taper attachment and double back gears; one 14×6 Hendey cone-head quick-change lathe; one 14×8 standard lathe; one 14×7 Prentice geared head quick-change lathe; one Prentice motor-driven 15×6 lathe; one Flather motor-driven 14×5 lathe; one 14×6 geared head quick-change Lodge and Shipley lathe; one 14×6 motor-driven Lodge and Shipley selective head lathe; a Rivett bench lathe; a Monarch 14×5 motor-driven quick-change lathe; and two individual drive 14×6 American high duty geared head engine lathes, one of these with turret attachment. The planer type of machine is represented by a 16-inch back-geared Rockford shaper with compound head, and a 22×22×8 foot Gray planer. All kinds of plane surfaces can also be cut upon two Kempsmith and two Cincinnati universal milling machines, which are fitted with dividing heads for gear cutting, differential indexing, spiral grooving etc., as well as a good variety of cutters. One Kempsmith machine is supplied with a universal milling attachment. A No. 12 Brown and Sharpe motor-driven universal grinder, and a Greenfield cutter grinder serve as practical examples of high-class precision machine tools. A graphical watt-meter permits tests of tool shapes and machinery conditions. A tilting brass-furnace, moulders' benches, wood lathes, band saw, jointer, sander, and the necessary small tools provide for simple pattern and foundry work. The metallurgical furnaces and equipment listed with the

mechanical laboratory apparatus is also available for shop use. For miscellaneous work, a double-disc motor-driven disc grinder, a power oil-stone, work benches and vises, two hand-tool grinders, a power hack-saw, down-draft forges, a 20-inch drillpress, a sensitive drill, an arbor press, an air hammer, air and electric drills, portable electric grinders, an acetylene generator, eight complete oxy-acetylene welding outfits, and two electric arc welders (G. E. and Lincoln) are available. A sufficient supply of small hand and machine tools, lathe sets, reference standards and precision measuring instruments is issued on checks from a separate tool-room. About half the machine tools have individual motor drive. The others are grouped about a line-shaft and a 15 horse-power motor.

STUDENT ORGANIZATIONS

From the opening days of the Rice Institute the students have participated in the various forms of intramural and intercollegiate athletic contests, with the cooperation of the Committee on Outdoor Sports. Of other student organizations, the first society actually to be formed was the Young Men's Christian Association. This step on the part of the young men was speedily followed by a similar one on the part of the young women in the organization of their branch of the college Young Women's Christian Association. The founding of these religious societies, both of which have contributed to the social life and the religious spirit of the place, was followed in the course of the early years by the forming of several literary societies: three by the young women, the oldest society bearing the name of Elizabeth

Baldwin, wife of the founder of the Institute, a later organization known as the "Pallas Athene Literary Society," and the youngest, named the "Owen Wister Literary Society"; and three by the young men, known respectively as "The Owl Literary Society," the "Riceonian Literary and Debating Society," and a later organization, "The Congressional Club," organized after the order of the House of Representatives and considering in debate leading public issues as they arise before Congress. Under the auspices of these first literary societies the first of the undergraduate periodical publications was undertaken, namely, "The Thresher," which appeared fortnightly from its initial number in January, 1916, to June, 1918, and has been published weekly since. Previous to the organization of the staff of "The Thresher," the Class of 1916 made arrangements for the publication of the first class annual of the Institute, "The Campanile," which appeared in the spring of 1916. The second and third volumes were issued by the classes of 1917 and 1918, respectively, and subsequent annual editions have been published by the representatives of the student body as a whole. In addition to the student organizations mentioned above, various departmental clubs and scientific societies have been contributing to the intellectual life of the Institute, one of the earliest of these being the Engineering Society, which was started in 1914, and which in recent years has been conducting as a student enterprise the biennial Rice Engineering Show, a public exhibition of the activities of the engineering and science laboratories. The student body is organized into a Student Association which includes all students of the Institute and serves as the official organ for the expression of their views and for the

promotion of student enterprises. In particular the undergraduate periodicals are now maintained under the auspices of this association. A Students' Council, elected by the Association, provides leadership in the Association. The president of the Association is president of the Council. The halls of residence for men are governed by a student Hall Committee, under the general supervision of the Dean.

Mr. William M. Rice, Jr., has provided a cabinet for the preservation and exhibition of trophies won by Rice teams in local and intercollegiate contests. This elaborate cabinet, designed by Mr. R. A. Cram, supervising architect of the Institute, is a most beautiful example of wood carving.

Through the generosity of Mrs. James L. Autry and as a memorial to her husband, the late James L. Autry, of Houston, the Diocese of Texas of the Protestant Episcopal Church is maintaining in the immediate vicinity of the Rice Institute, Autry House, as a social and religious centre. The corner stone of Autry House was laid during the commencement ceremonies of the Class of 1921. To this community group of the Episcopal Church Mrs. E. L. Neville, of Houston, in memory of her brother, the late Edward Albert Palmer has contributed the beautiful Edward Albert Palmer Memorial Chapel, which was dedicated November 27, 1927. All the opportunities of these establishments are available to the students of the Rice Institute irrespective of religious affiliation. Other religious bodies have intimated that they are considering future provision for similar undertakings in the neighborhood of the Rice Institute.

Through personal association with several generations of Rice students, Mr. George Cohen of Houston was led to make generous provision for the Robert and Agnes Cohen

House in honor of his parents, who for many years have been well known and highly respected citizens of Texas. This beautiful building, in materials and architecture conforming with the first of the Rice quadrangles, designed to afford to the faculty the advantages of a club-house on the campus, was dedicated at the annual homecoming of the Rice Alumni on Thanksgiving Day of the year 1927.

FIFTEENTH
ANNUAL COMMENCEMENT

FIFTEENTH ANNUAL COMMENCEMENT

DEGREES IN COURSE CONFERRED JUNE 9, 1930

At the fifteenth annual commencement convocation of the Rice Institute held at the conclusion of the eighteenth academic session the baccalaureate sermon was preached by the Reverend James Gordon Gilkey, D.D., Minister of the South Congregational Church of Springfield, Massachusetts, and the commencement address was delivered by Ralph Adams Cram, Litt.D., LL.D., of Boston, Massachusetts, Supervising Architect of the Rice Institute. On the recommendation of the Faculty and by the authority of the Trustees, the President of the Rice Institute, at the final ceremonies in the Academic Court on the morning of June 9, 1930, conferred the following degrees respectively:

BACHELOR OF ARTS

Mariann Adkins
Charles Joseph Aleo, Jr.
Joseph Daniel Allnoch
Forrest Lee Andrews
William French Arnold
Sarah Kathryn Arrants
Jake Axelrod
William Stuart Bailey
Ella Margaret Becker
Isabel Louise Becker
Malcolm Dorden Bennett
Mary Hallie Berry
Josephine Elderkin Hazlehurst Berryman
Dorothy Crew Bethany
Frances Emma Black
Lillie Bigelow Blake—With Honours in English
Lenore Bland
Herbert Bernard Bollfrass

Mary Elizabeth Boone
Marjorie Adele Bourne
Blanche LaDelle Brandt
Kathryn Van Tassel Brisbine
Katherine Augusta Brooks —With Distinction
Howard Fletcher Brown—With Distinction
John Benjamin Brown
Allen Harn Caldwell
Elvis Aubrey Calvin, Jr.
Durell Miller Carothers
James Vincent Carroll, Jr.
Julia Eileen Christman
Albert Irving Clark
Elizabeth Mackey Clark
Miles Wayne Clark
Albert James Clugston
Harold Jerome Cohn, Jr.
Mildred Elizabeth Cole
Winston Dunlap Connell
Marian Ada Cooke
Virginia Dee Coombs
Marie Elizabeth Coughlin
Gustav Edmund Cranz, Jr.
Corinne Crawford
Winnie Davis Crisp
Howell Hohmann Cunyus
Elizabeth Curson
William Horton Davidson, Jr.
Hamlet Irvine Davis, Jr.
Mildred Lucille Davis—With Honours in Mathematics
Mary Atkinson Delaney—With Distinction
Frances Wilemina Dellheim —With Distinction
Grace Mary Dellinger
Lillie Veal Dew
Robert Dickinson
Elda Frances Diederich
Joe Fowler Dishron
Margaret Louise Jeannin Dix—With Honours in Mathematics
Rowe Shear Drake
Harvey George Durham
Marie Edwards
Frances Josephine Egan
Virginia Hester Emerson
Minnie Etkind—With Distinction
Ethel Louise Felder
Grace Hawkins Felder
Bernadine Louise Derrick Field
Nancy Duncan Forbes—With Distinction
Lynn Vineyard Foster—With Honours in French
Arnold Bartel Franzen

John Herbert Gage
Isaac Garrett
Norman Sterling Garst
Frances Sara Gieseke
Diana González—With Distinction
Mary Louise Goss—With Honours in French
Zerilda Louise Grant
Margaret Helen Gready
Joseph Harris Greenwood
Katherine Elizabeth Griggs
Homoiselle Carolyn Haden
Catherine Audrey Hannon
Marguerite Undine Herzik
Anne Catherine Heyck
Althea Jones Hill—With Distinction
Kinch Hillyer, Jr.
Robert Arthur Himes
Margaret Elizabeth Hooks
Lillian Elizabeth Horlock
Elizabeth Hotchkiss
Nicholas Edward Hyde
Carl Illig, Jr.—With Distinction
Beatrice Louise Jantzen
Elisabeth John
Lee Harnie Johnson, Jr.—With Honours in Mathematics
Lois Lorine Johnson
Bush Jones, Jr.
Lillie Louise Kayser
Cecil Showman Keith
Graham Kendall
Michael Clark Kendrick
Frederic William Kern
Louis Kestenberg
Ethel Jules Koehler
Alexis S. Kottwitz
Evelyn Marie Kuhn
Roslyne Kuminir
Lavoisier Lamar—With Distinction
Stuart Lyle Lamkin
Barnes Fletcher Lathrop—With Distinction
Grace Margery Lawson
Jerome Harold Levy
Johnny Fay Lilly
Katie Gladys Loggins
Margaret Marie Long
Irvin Manuel Lurie
James McKay Lykes, Jr.
Sanders Lyles—With Distinction
Thomas Pinkney Lyon
Martha Evelyn McGinty
Sarah McNeill
Elsie Evelyn Marrs
Pauline Pearl Meadows

Mae Estelle Meyers
Raymond Hugh Moers
Dorothy Hunt Moore
Ann Bushnell Moreno
Whitman Denny Mounce
Marjorie Evelyn Nicks
Charles Dallas O'Brien
Felide Corinne O'Brien
Mildred Estelle Ogg—With Distinction
Anna Dean Ording
Luke Osburn—With Honours in English
Frances Adelle Palmer
Aileen Elizabeth Peckham
Abel Brown Pierce, Jr.
Thomas Marion Rainbolt
Manse Yulee Randolph
Celia Mary Reeder
Julia Hurd Ricker
John Cobb Ridley
Neolie Anna Romero
Milton Meyer Rosenzweig
Nelson Louis Rudmose
Henry Howarton Sanford
John William Schuhmacher
Spencer Jerome Scott
Alice Frances Seaborn
Samuel Morris Slack
Clara May Smith
Elizabeth Maury Smith
Julia Bishop Smith
Lewis Edwin Smith
Lewis Sidney Smith
Orrien Russell Smith
Paul Allen Smith
Ruth Jean Sorrells
Frances Ione Spence
Helen Starkey—With Distinction
Charlotte Hoag Steeger
Dorothy Stokes
Theodore Alfred Strong—With Distinction
James Udell Teague
Evan Foster Thomas
Mildred Heyne Tigner
Mittie Sara Tinsley
Mary Elizabeth Tisdale—With Distinction
Margaret Anne Toler—With Distinction
Rudolph Harry Tolson
Edward John Vogel
Dorothy Crittenden Walker
Carolyn Elizabeth Washburn
Madeline Frances Watts
Guy Reagan Webb
Edythe Giraud Westerfield
Janie Chapin Westmoreland
Adele Wharton

Genevieve White
Cecil David Williams
Nola Mae Williams—With Honours in Spanish
Tooley Elise Williamson
Jesse Major Willis
James Thomas Wilmoth
James Durward Witte
Otto Frederick Woestemeyer
Hal Davenport Woodward—With Honours in History
Elizabeth Lee Workman
Mary Elizabeth Wright—With Distinction
Frank Raymond Yeatman, Jr.
Frances Marie Zilker
Nicholas Newton Zirbel
David Zuber

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

Sam Alfano
Bernard Alexander Axelrad
Lemuel Schumacher Benbury
Robert Manton Cooper
Norman William Faust
Walter Roy Griffin
William Durnell Kirkpatrick
Gilbert Leroy Leach
Robb Young Caldwell Rankin
Charles Richker — With Distinction
Charles Frederick Royse

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

John Symons Hale, Jr.
John Gillespie Holland
Dan Mendell, Jr.
Marshall Robert Sanguinet
William Keesee Van Zandt —With Distinction
Frank Birch Wallis

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Van Bernard Case, Jr.
George Charles Debney
Carl Dodge
Edward Eugene Ferrin, Jr.
Eleuterio de la Garza
Bert Paul Howerton
James Moore Sturgis
Wilbur Wright, Jr.
John Richard Yancey

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Glen Reid Hodgson
Lyle Leroy Payne—With Distinction
Egerton Seitz Robb
Raymond Ruser Stone
Oscar Cicero Talbert
Robert Henry Winans (as of the Class of 1929)

BACHELOR OF SCIENCE IN ARCHITECTURE

Andrew Jackson Kehoe
Earl Emmet Koeppe
Harvin Cooper Moore
Robert William Talley
Francis Wayland Vesey

MASTER OF ARTS

William Richard Bridgwater
Mary Towell Carothers
Paul Duane Harwood
Clare Hibberd Kean
Louise Lenoir
George Payne Montgomery, Jr.
Phil Brewster Powers
Vernon Truett Schuhardt
Flora McIver Streetman
William Josiah Taylor, Jr.
Laura Topham
Rudolph Frederick Weichert, Jr.

DOCTOR OF PHILOSOPHY

Edward Josephi Durham
Ray Nelson Haskell
Clyde Roland Johnson

SCHOLARSHIPS AWARDED FOR 1930–31

THE GRAHAM BAKER STUDENT

Thomas Richard Moore, Class 1931, of Houston, Texas

HONOURABLE MENTION FOR THE GRAHAM BAKER STUDENTSHIP

(*Alphabetical*)

Howard Malcolm Banner, Class 1931, of Fort Worth, Texas
Samuel Rhodes Dunlap, Class 1931, of Houston, Texas
Gilmore Taylor Gwin, Jr., Class 1933, of San Antonio, Texas
John Tom Hurt, Class 1931, of Waco, Texas
Carolyn Marcelle King, Class 1932, of Houston, Texas
Violet Madeline Mattson, Class 1931, of Houston, Texas
John Lewis Moilliet, Class 1931, of Seymour, Texas
Marion Hubbell Montgomery, Class 1931, of Houston, Texas

THE HOHENTHAL SCHOLARS

(*Alphabetical*)

Charles Melvin Blair, Class 1931, of Vernon, Texas
Percy Beal Burk, Class 1933, of Houston, Texas
Samuel Rhodes Dunlap, Class 1931, of Houston, Texas
John Lewis Moilliet, Class 1931, of Seymour, Texas
John Restoff Rodell, Class 1933, of Hearne, Texas
George Alfred von Johnson, Class 1933, of Galveston, Texas

THE SHARP SCHOLARS IN CIVICS AND PHILANTHROPY

(*Alphabetical*)

Joe Arthur Allen, Class 1931, of Frost, Texas
Fanny Segal, Class 1931, of Houston, Texas

THE SCHOLAR OF THE JOHN MCKNITT ALEXANDER CHAPTER, DAUGHTERS OF THE AMERICAN REVOLUTION

Elizabeth Minerva Goodson, Class 1931, of Houston, Texas

THE ELLEN AXSON WILSON SCHOLARS

(*Alphabetical*)

Helen Booth Williams, Class 1931, of Houston, Texas
Margaret Jane Williams, Class 1932, of Houston, Texas

THE ELIZABETH BALDWIN LITERARY SOCIETY SCHOLAR

James Herbert Sawyer, Jr., Class 1932, of Beaumont, Texas

THE PALLAS ATHENE LITERARY SOCIETY SCHOLAR

Ruth Rebecca Griffiths, Class 1932, of Des Moines, Iowa

THE ASSOCIATION OF RICE ALUMNI SCHOLAR

Howard Malcolm Banner, Class 1931, of Fort Worth, Texas

THE DANIEL RIPLEY SCHOLAR

George Maximilian Illes, Class 1933, of Dallas, Texas

THE JUNIOR ENGINEERING SCHOLAR

Hyman Dave Massin, Class 1931, of Galveston, Texas

ANNOUNCEMENTS

THE EDITH RIPLEY SCHOLARS

(*Alphabetical*)

Marian Frances Harvey, Class 1932, of Houston, Texas
Violet Madeline Mattson, Class 1931, of Houston, Texas
Helen Elizabeth Turner, Class 1933, of Angleton, Texas

THE MARY PARKER GIESEKE SCHOLAR

John LeRoy Sims, Class 1933, of Houston, Texas

TRAVELING FELLOWSHIP

William Bridgwater, Class 1928, of Houston, Texas

TRAVELING SCHOLARSHIP IN ARCHITECTURE

Edward Bowers Arrants, Class 1925, of Houston, Texas

HONOURABLE MENTION FOR THE
TRAVELING SCHOLARSHIP IN ARCHITECTURE

James Ira Campbell, Class 1924, of Houston, Texas

THE ELIZABETH BALDWIN LITERARY SOCIETY FELLOWSHIP

Barnes Fletcher Lathrop, Class 1930, of East Las Vegas, New Mexico

THE LADY GEDDES PRIZE IN WRITING

Henry Evans Robinson, Class 1932, of Dallas, Texas

LIST OF STUDENTS

1930–31

LIST OF STUDENTS

GRADUATE STUDENTS

Aldrich, Marguerite Durrette* *Houston, Texas*
B.A., Rice, 1929

Banta, Henry Eugene* . . . . *Electra, Texas*
B.A., Rice, 1927

Barreda, Maria Ana* . . . . *Laredo, Texas*
B.A., Rice, 1929

Beckenbach, Edwin Ford* . . *Dallas, Texas*
B.A., Rice, 1928
M.A., Rice, 1929

Blake, Lillie Bigelow* . . . . *Floresville, Texas*
B.A., Rice, 1930

Bryan, Gloria Norvell . . . . *Houston, Texas*
B.A., Rice, 1921

Caldwell, Allen Harn* . . . . *Houston, Texas*
B.A., Rice, 1930

Castellanos, Leopoldo John . . *Houston, Texas*
B.S. in M.E., Rice, 1926

Chapman, Thomas Shelby* . . *McAlester, Oklahoma*
B.A., Rice, 1928

Cook, Theodore Warren . . . *Battle Creek, Michigan*
B.A., Battle Creek College, 1930

Coughlin, Marie Elizabeth . . *Houston, Texas*
B.A., Rice, 1930

Daoud, Lateefeh . . . . . *Houston, Texas*
B.A., Park College, 1930

*Candidacy for advanced degree approved.

Dix, Margaret Jeannin* . . . *Houston, Texas*
B.A., Rice, 1930

Dodd, Robert H. . . . . *Guthrie, Oklahoma*
B.S. in Ch.E., Oklahoma Agricultural and Mechanical College, 1928

Dodge, Carl . . . . . *Abilene, Texas*
B.S. in E.E., Rice, 1930

Durham, Harvey George . . . *San Antonio, Texas*
B.A., Rice, 1930

Fitch, Mary Louise . . . . . *Houston, Texas*
B.A., Rice, 1927

Floed, Frances . . . . . *Houston, Texas*
B.S., University of Washington, 1927

Freyer, Frederick Reese . . . *Savannah, Georgia*
B.S., University of the South, 1929

Garza, Eleuterio de la* . . . *Brownsville, Texas*
B.S. in E.E., Rice, 1930

George, John Emmanuel*. . . *Houston, Texas*
B.A., Rice, 1929

Gray, George Robert* . . . . *Houston, Texas*
B.S., Texas Christian University, 1928

Gregory, Kegham Solomon . . *Houston, Texas*
B.A., American University of Beirut, 1927

Griffin, Walter Roy* . . . . . *Houston, Texas*
B.S. in Ch.E., Rice, 1930

Harris, Sidon*. . . . . *Austin, Texas*
M.A., University of Texas, 1929

Harwood, Paul Duane*. . . . *Appleton, New York*
B.S., Cornell University, 1928
M.A., Rice, 1930

Henderson, Dorothy . . . . . *Houston, Texas*
B.A., Wellesley, 1930
Hovas, Alice Mannig* . . . . *Houston, Texas*
B.A., Rice, 1929
Johnson, Lee Harnie* . . . . *Harlingen, Texas*
B.A., Rice, 1930
Kern, Frederic William* . . . *Houston, Texas*
B.A., Rice, 1930
Kestenberg, Louis . . . . . *Houston, Texas*
B.A., Rice, 1930
Kuhn, Evelyn Marie . . . . *Houston, Texas*
B.A., Rice, 1930
Lilly, Johnny Fay . . . . . *Houston, Texas*
B.A., Rice, 1930
Locher, Gordon Lee* . . . . *Kansas City, Missouri*
B.A., Park College, 1925
M.A., Rice, 1927
Lurie, Irvin Manuel . . . . . *Houston, Texas*
B.A., Rice, 1930
Lyles, Sanders* . . . . . *Center, Texas*
B.A., Rice, 1930
Lyon, Thomas Pinkney . . . . *McGregor, Texas*
B.A., Rice, 1930
McKee, Donald Royce . . . . *Grinnell, Iowa*
B.A., Grinnell College, 1927
Matthes, Homer Clarence* . . *Ganado, Texas*
B.A., Rice, 1929
Metzler, Iris Erne . . . . . *Houston, Texas*
B.A., Rice, 1929
Miksch, Florence Castle . . . *Portland, Oregon*
B.A., Linfield College, 1927

Milligan, Winfred O.* . . . . *Coulterville, Illinois*
B.A., Illinois College, 1930
Moreland, Ferrin Bates* . . . *Portland, Oregon*
B.S., Oregon State Agricultural College, 1930
Neilan, Julia Ellen Motheral . *Houston, Texas*
B.A., Rice, 1929
Osburn, Luke* . . . . . *Webster, Texas*
B.A., Rice, 1930
Perry, Consuelo Elena . . . . *Houston, Texas*
B.A., Incarnate Word College, 1925
Quarles, Dorothy . . . . . *Houston, Texas*
B.A., Hollins College, 1930
Rawlinson, William Pierce . . *Houston, Texas*
B.A., Rice, 1929
Rees, Paul Klein . . . . . *Houston, Texas*
B.A., Southwestern University, 1923
M.A., University of Texas, 1925
Richmond, Josephine Berryman *Houston, Texas*
B.A., Rice, 1930
Romero, Noelie Ann . . . . . *Houston, Texas*
B.A., Rice, 1930
Rust, William Monroe, Jr.* . *Houston, Texas*
B.A., Rice, 1928
M.A., Rice, 1929
Schuhardt, Vernon Truett* . . *San Antonio, Texas*
B.A., University of Texas, 1925
M.A., Rice, 1930
Sherk, Kenneth Wayne* . . . *Portland, Oregon*
B.A., Reed College, 1928
Smith, Fleda Ray . . . . . *Monroe, Louisiana*
B.A., Rice, 1926

Smith, Flossie May . . . . . *Monroe, Louisiana*
B.A., Rice, 1926
Squyres, Louis Leroy. . . . . *Yoakum, Texas*
B.B.A., University of Texas, 1930
Stewart, Dorothy Stowell. . . *Houston, Texas*
B.A., Mount Holyoke College, 1924
Streetman, Flora McIver . . . *Houston, Texas*
B.A., Rice, 1926
M.A., Rice, 1930
Tabony, Ola Lee Stulting* . . *Houston, Texas*
B.A., Rice, 1929
Talley, Robert William* . . . *Houston, Texas*
B.A., Rice, 1929
B.S. in Architecture, Rice, 1930
Wilkie, Le Roy . . . . . *Shreveport, Louisiana*
B. of E.E., Louisiana State University, 1927
Wilkin, Mabel Giddings* . . . *Houston, Texas*
B.A., Hollins College, 1918
Zilker, Frances Marie. . . . . *Houston, Texas*
B.A., Rice, 1930
Zirbel, Nicholas Newton* . . *Houston, Texas*
B.A., Rice, 1930

SENIORS†

Allen, Joe Arthur . . . . . *Frost, Texas*
Amerman, Jane . . . . . *Houston, Texas*
Andreas, Viva Buttery . . . . *Houston, Texas*
Arnold, Bryan Bailey . . . . *Henderson, Texas*
Arnold, Pearl Eva . . . . . *Houston, Texas*
Atlas, Jacob Henry. . . . . *Houston, Texas*

†As classified October 1st, 1930

Austin, Claire Nell. . . . . *Houston, Texas*
Avant, Hugh Clifford . . . . *Miami, Florida*
Axtell, Frank Foy . . . . . *Port Arthur, Texas*
Bailey, Iris Isabell . . . . . *Houston, Texas*
Banner, Howard Malcolm . . *Fort Worth, Texas*
Barnes, Ethel McDonald . . . *Houston, Texas*
Barnes, Mary Elizabeth . . . *Houston, Texas*
Barnette, Louis Atmar Milton. *Houston, Texas*
Barreda, Maria Estela . . . . *Laredo, Texas*
Barron, Joseph Mason . . . . *Houston, Texas*
Berling, Grace Selma. . . . . *Houston, Texas*
Blair, Charles Melvin. . . . . *Vernon, Texas*
Blewett, Joe Floyd. . . . . *Dallas, Texas*
Blocher, George Duvernoy . . *Houston, Texas*
Blondeau, Maude Bryan . . . *Houston, Texas*
Boe, Eddie Selmer . . . . . *Houston, Texas*
Bonner, Georgiana Campbell . *Houston, Texas*
Branard, Charles Ritchie . . . *Houston, Texas*
Brandt, Gloria Elizabeth . . . *Houston, Texas*
Bretschneider, Dorothy Gertrude *Houston, Texas*
Brown, Maurine Myrtle . . . *Houston, Texas*
Brown, Walter Carroll . . . . *Houston, Texas*
Brunet, Roberta Laird . . . . *Houston, Texas*
Bush, Maurine Leola. . . . . *Houston, Texas*
Byers, John William . . . . . *Denison, Texas*
Campbell, Morgan Skiles . . . *Fort Worth, Texas*
Ceyanes, Rosita . . . . . *Brownsville, Texas*
Chadwick, Irene May . . . . *Houston, Texas*
Chun, Harold August. . . . . *Houston, Texas*
Compton, Dorothy Cuny . . . *Houston, Texas*
Cook, William Lawrence, Jr. . *Houston, Texas*

Cornelius, Anne . . . . . *Houston, Texas*
Craig, Fred Lyon . . . . . *San Antonio, Texas*
Creekmore, Wynne Louis . . . *Houston, Texas*
Cullen, Agnes Louise . . . . . *Houston, Texas*
Culver, Cathryn . . . . . *Houston, Texas*
Davis, Francis Eugene . . . . *Houston, Texas*
Dissen, Doris . . . . . *Houston, Texas*
Doehring, Paul Christoph . . . *Houston, Texas*
Downing, Lewis Bertrand . . . *Coleraine, Minnesota*
Duggan, Jack Dies . . . . . *Houston, Texas*
Dunlap, Samuel Rhodes . . . *Houston, Texas*
Dupont, T. F. Jr. . . . . *Houston, Texas*
Eagle, Joe Hamman . . . . . *Houston, Texas*
Edwards, Arthur Raymond . . *Smithville, Texas*
Farrington, Charles Alexander . *Houston, Texas*
Fertitta, Julian Joseph . . . . *Beaumont, Texas*
Fields, Vesta Marie . . . . . *Houston, Texas*
Fincher, Oran A. . . . . *Houston, Texas*
Fivecoat, Dollie Mae . . . . . *Houston, Texas*
Flagg, Dorothy Christian . . . *Malakoff, Texas*
Flood, Claire Prescott . . . . *Houston, Texas*
Forbes, Al Gray . . . . . *Houston, Texas*
Foster, Frances Bevel . . . . *Houston, Texas*
Foster, Katherine . . . . . *Houston, Texas*
Fouts, Herbert Eugene . . . . *Houston, Texas*
Frerichs, Johnnie Clyde . . . . *Houston, Texas*
Friedman, Babette Fancile . . *Houston, Texas*
Fry, Edward Merrick . . . . . *Fort Worth, Texas*
Gallaway, Reuben Jackson . . *Ranger, Texas*
Garrison, David Lacey . . . . *Houston, Texas*
Garza, Joseph Zeferino, Jr. . . *Brownsville, Texas*

Gayle, Nannie Mae . . . . . *Houston, Texas*
Gerke, Taylor Burton . . . . *Fort Worth, Texas*
Girardey, Savannah . . . . . *Houston, Texas*
Goldofsky, Helen . . . . . *Houston, Texas*
Good, Donald Blake . . . . . *Houston, Texas*
Goodson, Minerva Elizabeth . *Houston, Texas*
Greentree, Alexander. . . . . *Galveston, Texas*
Greenwood, Ella Corinne . . . *Houston, Texas*
Gulden, Robert Joseph, Jr. . . *Coppell, Texas*
Hagler, Ruby Belle. . . . . *Houston, Texas*
Hailey, John H., Jr. . . . . *Houston, Texas*
Hannon, John Louis . . . . . *Houston, Texas*
Harkrider, Clovis Joseph . . . *Fort Worth, Texas*
Hawley, George Newton . . . *Houston, Texas*
Hensley, Harold Leroy . . . . *Victoria, Texas*
Hill, Joseph Warren . . . . . *Edna, Texas*
Hitchcock, Gladys Frances . . *Houston, Texas*
Hooper, Kathryn Lyle Logue . *Houston, Texas*
Hopkins, Mark Cartwright . . *Houston, Texas*
Hurt, John Tom. . . . . *Waco, Texas*
Hurwitz, William Samuel . . . *Houston, Texas*
Jackson, Katharine Margaret . *Houston, Texas*
Jacobe, Russel Lee. . . . . *Houston, Texas*
Jenness, Margaret Esther. . . *Houston, Texas*
Jett, Zelma Pauline . . . . . *Houston, Texas*
Judd, Walter Lehmann. . . . *Houston, Texas*
Kaplan, Solomon. . . . . *Houston, Texas*
Keating, Patrick Joseph . . . *Houston, Texas*
Kitchel, George Behrman. . . *Ada, Oklahoma*
Lindsey, Benjamin Slayden . . *San Antonio, Texas*
Lloyd, Hermon Frederick. . . *Houston, Texas*

Loewenstein, Joseph Meyer . . *Houston, Texas*
Logan, Frances Elizabeth . . . *Houston, Texas*
Long, James Catherine . . . *Houston, Texas*
Ludtke, Morris Edward. . . . *Houston, Texas*
McCarthy, Edward Wister . . *Galveston, Texas*
McCarthy, Margaret Lucile. . *Houston, Texas*
McDaniel, Hollis Green. . . . *Houston, Texas*
McGilvray, Bernice Elizabeth . *Houston, Texas*
McKay, William McLaurin . . *Humble, Texas*
McKean, Jerome Gore . . . . *Houston, Texas*
McLain, Cecil Howard . . . . *Houston, Texas*
MacLaughlin, Rowena . . . . *Houston, Texas*
Manuel, Ben Briggs . . . . . *Houston, Texas*
Markins, Yeager Lee. . . . . *Corpus Christi, Texas*
Marmion, Catherine Lucille. . *Houston, Texas*
Martin, Margaret Lee . . . . *Houston, Texas*
Massin, Hyman Dave . . . . *Galveston, Texas*
Matthews, Regina Alice . . . *Houston, Texas*
Mattson, Violet Madeline. . . *Houston, Texas*
Mengden, Hope Bandera . . . *Houston, Texas*
Metzler, Edwin Samuel, Jr. . *Houston, Texas*
Millsapps, Lucile Smith. . . . *Houston, Texas*
Miron, Charles . . . . . *Houston, Texas*
Miron, Sam. . . . . *Houston, Texas*
Mitchell, Catherine Elizabeth . *Houston, Texas*
Mitchell, Martha Ruth. . . . *Houston, Texas*
Moilliet, John Lewis . . . . . *Seymour, Texas*
Montgomery, Marion Hubbell. *Houston, Texas*
Moore, Lonnie Allen, Jr. . . . *Houston, Texas*
Moore, Mary Louise . . . . . *Houston, Texas*
Moore, Thomas Richard . . . *Houston, Texas*

Muery, Mildred Louise . . . . *Brenham, Texas*
Murphy, Velma Meyer . . . . *Houston, Texas*
Murphy, William Wilkins, Jr. . *Houston, Texas*
Nachlas, Abe . . . . . *Houston, Texas*
Nelson, Annalee . . . . . *Houston, Texas*
Norvell, Charles Alford . . . . *Gilmer, Texas*
Norvell, Harvey . . . . . *Beaumont, Texas*
Nye, Alice Elizabeth . . . . . *Houston, Texas*
Oatfield, Harold John . . . . *Milwaukie, Oregon*
Obenhaus, Victor Martin . . . *Clifton, Texas*
O'Fiel, Anna Bertha . . . . . *Houston, Texas*
Oliver, John Stanley . . . . . *Houston, Texas*
Owens, Joseph Andrew, Jr. . . *Beaumont, Texas*
Parker, James Lane . . . . . *Dallas, Texas*
Petitfils, Richard Quintin . . . *Houston, Texas*
Planchak, Vera . . . . . *Houston, Texas*
Power, Frank . . . . . *Edna, Texas*
Qualtrough, Annie Ray . . . . *Houston, Texas*
Quin, Eleanor Dérby . . . . . *Houston, Texas*
Rawlins, Harry Erle, Jr. . . . *Lancaster, Texas*
Reed, Virginia Dwire . . . . . *Houston, Texas*
Reid, Elton Felix, Jr. . . . . *Houston, Texas*
Reid, Hazel Frances . . . . . *Houston, Texas*
Renn, Philip . . . . . *Houston, Texas*
Riley, Marjory Burges . . . . *San Antonio, Texas*
Robertson, Marguerite Victoria *Houston, Texas*
Robinson, Jessie Dew. . . . . *Missouri City, Texas*
Robinson, Shirley Martha. . . *Houston, Texas*
Rosenberg, Louis. . . . . *Houston, Texas*
Ross, Elizabeth Stuart . . . . *Houston, Texas*
Rough, Thomas Henry . . . . *Dallas, Texas*

Roy, Max Ferdinand. . . . . *Houston, Texas*
Russell, Bonnie Boone . . . . *Houston, Texas*
Sakowitz, Julienne. . . . . *Houston, Texas*
Satterfield, Sue Lo John . . . *Houston, Texas*
Schneider, Elsa . . . . . *Houston, Texas*
Schwarz, Charles Norman. . . *New Orleans, Louisiana*
Scott, Helen Nina . . . . . *Houston, Texas*
Seaman, Marian Estelle. . . . *Houston, Texas*
Sellingsloh, Gus . . . . . *Houston, Texas*
Simpson, John David, Jr. . . *Waco, Texas*
Smith, Marion Judson . . . . *Quanah, Texas*
Stancliff, Lester Raymond. . . *Houston, Texas*
Stevens, Juanita Rose . . . . *Houston, Texas*
Stevenson, Murphy Donaghey *Houston, Texas*
Strobel, Jean Eleanor. . . . . *Chenango, Texas*
Stuart, Robert Wilmer . . . . *Houston, Texas*
Swanson, James Trotter, Jr. . *Navasota, Texas*
Taggart, Millard Seals . . . . *Houston, Texas*
Tallichet, Mary Estelle. . . . *Houston, Texas*
Taylor, Charles Reece . . . . *Houston, Texas*
Thomsen, May Louise . . . . *Houston, Texas*
Thornell, Eleanor Greenlee . . *Corsicana, Texas*
Thorstenberg, Aileen Eleanor . *Houston, Texas*
Trost, Henry Louis, Jr. . . . *Houston, Texas*
Tryon, John Lawrence, Jr. . . *Houston, Texas*
Turner, Amy Lee . . . . . *Gainesville, Texas*
Turner, Robert Van . . . . . *Houston, Texas*
Vandaveer, Alene Mills. . . . *Houston, Texas*
Vaughan, Edna May. . . . . *Houston, Texas*
Volkmer, Fritz Paul . . . . . *Edna, Texas*
Wade, Laurine Elizabeth . . . *Houston, Texas*

Wallace, William McCree, Jr. *Houston, Texas*
Walter, Katie Emma. . . . . *Houston, Texas*
Ward, Thurman Lee . . . . . *Vernon, Texas*
Weiser, Fanny Segal . . . . . *Houston, Texas*
Weismann, Edna Kathryn . . *Houston, Texas*
Westheimer, Eugene Gerald. . *Houston, Texas*
Westheimer, Joseph Michael . *Houston, Texas*
White, Rex Harding . . . . . *Houston, Texas*
Whiteley, Robert Samuel. . . *Hillsboro, Texas*
Williams, Helen Booth . . . . *Houston, Texas*
Willis, Floyd, Jr. . . . . *Dallas, Texas*
Wilson, Glenn Wyman . . . . *Houston, Texas*
Wilson, Sidney Johnston, Jr. . *Fort Worth, Texas*
Winkler, Eberhard Kenneth. . *Houston, Texas*
Winston, Warrena Worley . . *Houston, Texas*
Wittman, Arthur Meidling . . *Baltimore, Maryland*
Woods, Joe Worth. . . . . *Houston, Texas*
Works, Madden Travis. . . . *Fort Worth, Texas*
Wright, Harold Bell . . . . . *Dallas, Texas*
Yorty, Evelyn. . . . . *Houston, Texas*

JUNIORS†

Acheson, Volney Archibald . . *Denison, Texas*
Adams, Tod Robinson . . . . *Houston, Texas*
Albaugh, Reuben Ray . . . . *San Antonio, Texas*
Aldis, Mary Mozelle . . . . . *Houston, Texas*
Allerton, Margaret Evelyn . . *Houston, Texas*
Allison, Harold Ramsey. . . . *Houston, Texas*
Amerman, Earl . . . . . *Houston, Texas*
Archer, James Edwin . . . . *Houston, Texas*

†As classified October 1st, 1930

Arledge, Rose Wood . . . . . *Houston, Texas*
Armstrong, Ethel Gaines . . . *Houston, Texas*
Atkinson, Burton . . . . . *Houston, Texas*
Bacon, Thomas Rhone, Jr. . . *Abilene, Texas*
Baldry, Richard Perry . . . . *Fort Worth, Texas*
Balzen, Richard William . . . *San Antonio, Texas*
Barnett, Donald Austin . . . *Dallas, Texas*
Barry, William Earl . . . . . *Houston, Texas*
Bartine, Ruby Frances . . . . *Houston, Texas*
Barton, Norwood Packard . . *Mercedes, Texas*
Batt, Elizabeth Dale . . . . . *Houston, Texas*
Batte, Helen Elizabeth . . . . *Houston, Texas*
Beard, Gertrude Ray . . . . *Humble, Texas*
Bearmann, Robert Charles . . *Houston, Texas*
Beatty, Richard William . . . *Houston, Texas*
Bell, Charles Kenneth . . . . *Houston, Texas*
Best, Joseph Charles . . . . . *Houston, Texas*
Beyette, Charles Keith . . . . *Fort Worth, Texas*
Blazek, Alice . . . . . *Houston, Texas*
Block, Sarah . . . . . *Houston, Texas*
Bloom, Manuel Gordon . . . *Houston, Texas*
Boehm, Herman Amond, Jr. . *Houston, Texas*
Bohannon, Milton . . . . . *San Antonio, Texas*
Boyd, Ina Helene . . . . . *Houston, Texas*
Boynton, Elbert Arthur . . . *Kemp, Texas*
Bradbury, Walter Aubrey . . *Goose Creek, Texas*
Brandes, William Edward . . *Coral Gables, Florida*
Brown, John Oliver, Jr. . . . *Houston, Texas*
Brown, Ruby Elizabeth . . . *Houston, Texas*
Browne, Thomas Maxwell . . *San Antonio, Texas*
Buchholz, Douglas Alden . . *La Porte, Texas*

Bulbrook, Anna Virginia . . . *Fort Worth, Texas*
Bush, James Victor . . . . . *Houston, Texas*
Buxton, Alice Martha . . . . *Houston, Texas*
Bybee, Evelyn Leslie. . . . . *Houston, Texas*
Cain, James . . . . . *Houston, Texas*
Calhoun, Festus Farnsworth . *Houston, Texas*
Campbell, Ruth Earline . . . *Houston, Texas*
Carlisle, Charles Harry . . . *Houston, Texas*
Carpenter, Sallie McIntyre . . *Houston, Texas*
Carter, Lucian Carlton . . . *Nacogdoches, Texas*
Carter, Margaret Warn . . . *Houston, Texas*
Cole, Robert Moreland . . . *Frederick, Oklahoma*
Coleman, William Beyer . . . *Lake Charles, Louisiana*
Collins, Charlotte Ann . . . . *Houston, Texas*
Cook, Charles William . . . . *Beaumont, Texas*
Correll, Edward Lawrance . . *El Campo, Texas*
Cottingham, Martha Holmes . *Houston, Texas*
Cunningham, Charles Louis . *Eliasville, Texas*
Cunyus, Dorothy Mary Wilson *Houston, Texas*
Davis, Mary Adeline . . . . *Houston, Texas*
Dawson, Lois Rose Margaret . *Houston, Texas*
Delambre, Blanche Major . . *Houston, Texas*
Dixon, William Frederick . . *Houston, Texas*
Donoghue, David Francis . . *Houston, Texas*
Dreaper, Dorothy Aileen . . . *Houston, Texas*
Dunk, George Gilbert . . . . *Houston, Texas*
Durham, Lenore May . . . . *San Antonio, Texas*
Dwyer, Gwendolyn Helen . . *Houston, Texas*
Eaker, John Robert . . . . . *Little Rock, Arkansas*
Eaves, Reveris . . . . . *Houston, Texas*
Edwards, Donald Buford . . *Fort Worth, Texas*

Fanestiel, Albert . . . . . *Goose Creek, Texas*
Felder, Sibyl . . . . . *Houston, Texas*
Finkelstein, Bennett . . . . . *Houston, Texas*
Finley, George Franklin . . . *Tulsa, Oklahoma*
Flick, Evelyn Frances . . . . *Houston, Texas*
Forester, Helen Adele . . . . *Houston, Texas*
Franzen, Clifford Alfred . . . *Collegeport, Texas*
Freeman, Bernard W. . . . . *Houston, Texas*
Frerichs, Louise Ellen . . . . *Houston, Texas*
Funke, Virginia Lee . . . . . *Houston, Texas*
Garze, William de la . . . . *Brownsville, Texas*
Geren, Levert Langston . . . *Groesbeck, Texas*
Geyer, Gustave John . . . . *Dallas, Texas*
Gibson, Beth . . . . . *Houston, Texas*
Gonzalez, Carlos . . . . . *San Antonio, Texas*
Gould, Mildred Texas . . . . *Houston, Texas*
Graff, Leslie Pierce . . . . . *Houston, Texas*
Green, Wilbur Kelly . . . . . *Denison, Texas*
Grenader, Pincus . . . . . *Houston, Texas*
Griffin, Jo Beth . . . . . *Houston, Texas*
Griffiths, Ruth Rebecca . . . *Des Moines, Iowa*
Gudenrath, George Louis . . *Lufkin, Texas*
Hagemeier, Eleanor Snell . . *West Columbia, Texas*
Hahn, Joseph Williams . . . *Beaumont, Texas*
Hamilton, Arthur Louis, Jr. . *Houston, Texas*
Hanks, John Blake . . . . . *Shreveport, Louisiana*
Harrel, Mary Virginia . . . . *Houston, Texas*
Harvey, Marian Frances . . . *Houston, Texas*
Harvey, Mildred Emmeline . *Houston, Texas*
Heinson, Aetna Mae . . . . *Houston, Texas*
Herbst, Charles Arthur . . . *Houston, Texas*

Hess, Jacob Henry, Jr. . . . *Fort Worth, Texas*
Hewitt, G. W. . . . . *Houston, Texas*
Hickey, John Hastings . . . . *New Orleans, Louisiana*
Hickey, Martha Louise . . . *Houston, Texas*
Hicks, Newton Alonzo . . . . *Follett, Texas*
Hillyer, Madie Lea . . . . . *Houston, Texas*
Hodges, Jeddie Guy . . . . . *La Porte, Texas*
Holliman, W. Cone . . . . . *Bartlesville, Oklahoma*
Hooks, Ava Turney . . . . . *Houston, Texas*
Hopkins, William Franklin . . *Houston, Texas*
Howard, James Harris . . . . *Houston, Texas*
Hudspeth, William Junia . . *Arlington, Texas*
Hutchinson, Margaret Hortense *Houston, Texas*
Hutton, Mary Elizabeth . . . *Houston, Texas*
Ingram, Para Lee . . . . . *Houston, Texas*
Jacobs, Hollis Clair . . . . . *Yoakum, Texas*
Jacobs, Janeva Louise . . . . *Houston, Texas*
Jamerson, Richard Elmer . . *Donna, Texas*
Johnson, Charles Francis . . . *Houston, Texas*
Johnson, Loula Bess . . . . . *Houston, Texas*
Johnson, Walter Reuben . . . *El Campo, Texas*
Johnson, Willetta Bernard . . *Houston, Texas*
Jones, Edmund Ralph . . . . *Carmona, Texas*
Jones, Jessie Ophelia . . . . *Houston, Texas*
Jones, Kenneth Elmore . . . *Houston, Texas*
Jones, Morgan, Jr. . . . . *Abilene, Texas*
Joost, Ruth Martin . . . . . *Houston, Texas*
Kaplan, Harry . . . . . *Houston, Texas*
Kaplan, Morris . . . . . *Houston, Texas*
Kastl, Isabella Elizabeth . . . *Angleton, Texas*
Kattmann, Maurice Edmond . *Houston, Texas*

Kelly, Harold Leroy . . . . . *Houston, Texas*
Kelly, Mildred Helene . . . . *Houston, Texas*
Kennedy, Franklin Richards . *Dallas, Texas*
Killgore, Frederica Elizabeth . *Houston, Texas*
King, Carolyn Marcelle . . . *Houston, Texas*
Klein, Bernard . . . . . *Houston, Texas*
Kornblith, Rose . . . . . *Houston, Texas*
Kriegel, Hegar Charles . . . *Wharton, Texas*
Lancaster, Mildred Lucile . . *Houston, Texas*
Lenhart, William Ernest . . . *Eagle Lake, Texas*
Levinson, Gertrude . . . . . *Houston, Texas*
Lewis, Albert William . . . . *Parsons, Kansas*
Lewis, Carmen Letitia . . . . *Houston, Texas*
Ley, Wendel Duer . . . . . *Houston, Texas*
Lillich, Ralph Albert . . . . *Houston, Texas*
Long, Frances Virginia . . . *Houston, Texas*
Longcope, Donald Brooks . . *Houston, Texas*
Luckel, Mary Agnes . . . . . *Houston, Texas*
McAshan, James Everett . . *Houston, Texas*
McCleary, Thompson Hill . . *Waco, Texas*
McKinney, Vernon Lee . . . *Muenster, Texas*
McLeese, John Kenneth . . . *Jennings, Louisiana*
McNealy, Eddins Willard . . *Houston, Texas*
McWhirter, Dorothy Ann . . *Houston, Texas*
McWhorter, Cullen Joseph . . *South Houston, Texas*
Mangum, Arland Jay . . . . *Houston, Texas*
Marshall, Charles Bracken . . *Houston, Texas*
Marshall, Robison Arthur . . *Madisonville, Texas*
Martin, Herbert Allen . . . . *Houston, Texas*
Meadows, Clayton James . . *Houston, Texas*
Mellinger, Marian Maggie . . *Houston, Texas*

Mickle, Marvin Maurice . . . *Houston, Texas*
Miller, Francis Foster . . . . *Houston, Texas*
Miller, Nathan R., Jr. . . . . *Lufkin, Texas*
Mims, Charles Henderson . . *El Dorado, Arkansas*
Mistretta, Joseph Albert . . . *Mexico City, Mexico*
Mitchell, Elizabeth Jean . . . *Houston, Texas*
Mitchell, Ewell Emmitt . . . *Mosheim, Texas*
Monroe, Dan Barler . . . . . *Houston, Texas*
Montgomery, Catherine Viola *Houston, Texas*
Morris, Camille Girardey . . *Houston, Texas*
Moss, Earl Morlan . . . . . *Shreveport, Louisiana*
Motheral, Jefferson Davis, Jr. *Houston, Texas*
Murphy, Frankie Maud . . . *Houston, Texas*
Nemir, Marie . . . . . *Navasota, Texas*
Nosler, Richard Francis . . . *Houston, Texas*
Olivari, Marie Celeste . . . . *Houston, Texas*
Pearce, Cornelia Conklin . . . *Houston, Texas*
Perkins, Mary Belle . . . . . *Houston, Texas*
Plath, William Harro . . . . *Dallas, Texas*
Pollard, William Green . . . *Houston, Texas*
Pope, Mabel Christine . . . . *Houston, Texas*
Quinn, Edwin Patrick . . . . *Houston, Texas*
Raatz, Fred William, Jr. . . . *Houston, Texas*
Reader, William Whitney . . *Houston, Texas*
Reichert, Nelda Roma . . . . *Houston, Texas*
Rice, Lillie . . . . . *Houston, Texas*
Rieger, Alliene Mary . . . . *Houston, Texas*
Rienhardt, Lillie Evelyn . . . *Houston, Texas*
Robinson, Henry Evans . . . *Dallas, Texas*
Robinson, Julia Hamilton . . *Missouri City, Texas*
Rogers, John Laurence . . . *Houston, Texas*

Rulfs, Gerard William . . . . *Houston, Texas*
Rulfs, Mabel Charlotte . . . *Houston, Texas*
Russell, William Guthrie . . . *Pine Bluff, Arkansas*
Rust, Mary Gilmour . . . . *Houston, Texas*
Sawyer, James Herbert, Jr. . *Beaumont, Texas*
Schill, Gladys Elizabeth . . . *Houston, Texas*
Schulda, Stella Marie . . . . *Houston, Texas*
Schwartz, William Henry . . *Houston, Texas*
Scott, Jack . . . . . *Dallas, Texas*
Scott, Lucile Olive . . . . *Houston, Texas*
Sellers, Carmen Leah . . . . *Houston, Texas*
Shaffer, Ralph Allen . . . . . *Sweetwater, Texas*
Shearn, Maggie Kendall . . . *Houston, Texas*
Shpack, Carl Cornelius . . . *Fort Worth, Texas*
Smith, Doris Gladys . . . . . *Houston, Texas*
Smith, Stafford . . . . . *Houston, Texas*
South, Joe Aubrey . . . . . *Houston, Texas*
Stevens, Mary Alice . . . . . *Houston, Texas*
Stewart, Martha Kathryn . . *Houston, Texas*
Stewart, Walter Gilmore, Jr. . *McAllen, Texas*
Stone, Catherine Emma . . . *Houston, Texas*
Stone, Jack William . . . . . *Warrensburg, Missouri*
Stopford, James Chapman . . *Hackensack, New Jersey*
Strozier, Rosamunde Fisher . *Houston, Texas*
Swenson, Bailey Allen . . . . *Houston, Texas*
Swetland, Douglas Russell . . *Houston, Texas*
Talbot, Barry Wise . . . . . *Houston, Texas*
Taylor, Margaret Madeleine . *Houston, Texas*
Temple, John Stanley . . . . *Port Arthur, Texas*
Tindall, Maxine . . . . . *Houston, Texas*
Turner, Asa Elbert . . . . . *Houston, Texas*

Turner, Ellis Ambrose, Jr. . . *Houston, Texas*
Turner, Jack . . . . . *Dallas, Texas*
Urbantke, Marvin Hugo . . . *Houston, Texas*
Vickrey, Mabel Clairice . . . *Houston, Texas*
Vinock, Harry . . . . . *Beaumont, Texas*
Wait, Helen Rae . . . . . *Weslaco, Texas*
Walker, Cora Carolyn . . . . *Houston, Texas*
Wall, Comer Alexander. . . . *Houston, Texas*
Walton, Madeleine Cecile . . *Houston, Texas*
Watson, Earl William . . . . *Houston, Texas*
Webb, Curtis Hoffer . . . . . *Hubbard, Texas*
Weisinger, Nancy Elizabeth. . *Montgomery, Texas*
Wilkinson, Walter Wilford . . *Stephenville, Texas*
Williams, Julian Carrol . . . *Houston, Texas*
Williams, Margaret Jane . . . *Houston, Texas*
Williams, Martha Ellen . . . *Houston, Texas*
Williams, Roger James . . . *Houston, Texas*
Williamson, Bernice Elizabeth . *Houston, Texas*
Wilson, Ralph Woodrow . . . *Grand Prairie, Texas*
Wright, Lois Melissa . . . . *Corpus Christi, Texas*
Wright, Margaret Young . . *Houston, Texas*
Younts, James Ogden, Jr. . . *Beeville, Texas*
Zirbel, Constance Hazel . . . *Houston, Texas*

SOPHOMORES†

Adams, Eugenia Viola . . . . *Houston, Texas*
Adams, Grover Richard . . . *Denison, Texas*
Alexander, Joseph C., Jr. . . *Houston, Texas*
Allen, John Young . . . . . *Houston, Texas*
Allen, Millard Henry . . . . *Corpus Christi, Texas*

†As classified October 1st, 1930

Allnoch, Helen Eleanor . . . *Houston, Texas*
Anderson, John Frederick . . *Houston, Texas*
Anderson, Thomas Dunaway . *Houston, Texas*
Andrus, William Darwin . . . *Houston, Texas*
Armistead, Dero Fred . . . . *Denison, Texas*
Arnold, Leslie Adam . . . . *Houston, Texas*
Atkinson, Christine Lorena . . *Houston, Texas*
Austin, Dwight Hall . . . . . *Houston, Texas*
Azzarello, Frank, Jr. . . . . *Houston, Texas*
Badger, William Herbert . . . *Houston, Texas*
Baird, John Barnett, Jr. . . . *Dallas, Texas*
Barker, Bernice Etoile . . . . *Houston, Texas*
Barnes, Eleanor . . . . . *Houston, Texas*
Barry, Richard Montgomery, Jr. *Houston, Texas*
Bartlett, Herman Allan . . . *Houston, Texas*
Bauhof, Alfred . . . . . *Houston, Texas*
Bayer, Bernard Hyman . . . *Houston, Texas*
Beeley, James Alfred . . . . *Houston, Texas*
Bellows, Iris Maxine . . . . *Houston, Texas*
Black, Clarence Harper . . . *Shreveport, Louisiana*
Blair, Robert Kendrick . . . *Vernon, Texas*
Bland, Allyne . . . . . *Houston, Texas*
Bloom, Harry Alfred . . . . *Houston, Texas*
Bloomquist, Kathleen
Wilhelmina . . . . . *Houston, Texas*
Blount, Robert Henry . . . . *Mart, Texas*
Bollfrass, Charles, Jr. . . . . *Houston, Texas*
Bollfrass, Dorothy . . . . . *Houston, Texas*
Bond, Clifton Le Noir . . . . *Houston, Texas*
Bonner, Jesse Willis . . . . . *Houston, Texas*
Borskey, James Wilbur . . . *Velasco, Texas*

Botts, Mattie Adele . . . . . *Houston, Texas*
Brady, Kenneth . . . . . *Dallas, Texas*
Bresky, Leon . . . . . *Houston, Texas*
Bridger, Grover Leon . . . . *Dallas, Texas*
Bringhurst, John Henry, Jr. . *Houston, Texas*
Britton, Alice . . . . . *Houston, Texas*
Brown, Charles Thomas . . . *Corpus Christi, Texas*
Brugger, Wilfred . . . . . *Bellville, Texas*
Brummett, Thomas Lawrence *Pine Bluff, Arkansas*
Bruner, Joan Beloit . . . . . *Houston, Texas*
Burdeaux, Vera Mai . . . . . *Houston, Texas*
Burford, Reyburn Dean . . . *Houston, Texas*
Burge, Curtis Hunter . . . . *Houston, Texas*
Burk, Percy Beal . . . . . *Houston, Texas*
Cabaness, Truman Leo . . . *Sylvester, Texas*
Calhoun, Harold Eugene . . . *Houston, Texas*
Capehart, William David . . *Houston, Texas*
Caplan, Reuben Samuel . . . *Houston, Texas*
Carroll, Robroy Charles . . . *Houston, Texas*
Carter, William Winthrop . . *Houston, Texas*
Chambers, Robert Eugene . . *Mart, Texas*
Chapman, Willie Mae . . . . *Houston, Texas*
Chavanne, Harry Joseph . . . *Lake Charles, Louisiana*
Chun, Melvin Ernest . . . . *Houston, Texas*
Clay, Lucy Anile . . . . . *Houston, Texas*
Cleveland, Claudia Ellen . . . *Houston, Texas*
Coffee, John Byrd . . . . . *Vernon, Texas*
Coffman, Mary Ellen . . . . *Houston, Texas*
Coker, Thomas Jefferson . . . *Bartlett, Texas*
Cole, John Freeman . . . . . *Houston, Texas*
Collier, Albert Walker . . . . *Houston, Texas*

Conklin, Thomas Herman . . *Amarillo, Texas*
Connelley, James Quinn . . . *Fort Worth, Texas*
Cook, William Oscar . . . . *Beaumont, Texas*
Crain, Margaret Virginia . . . *Victoria, Texas*
Crittenden, Lissabelle . . . . *Houston, Texas*
Crofford, Carl Frederick . . . *Dallas, Texas*
Crosby, Lawrence Bruce . . . *Houston, Texas*
Cummings, David Malcolm . *Houston, Texas*
Dannenbaum, Joyce Jeannette *Houston, Texas*
Davis, Marvin Alfreda . . . . *Houston, Texas*
Dawson, James Elbert . . . . *Houston, Texas*
Dickensheets, Lavoné Lowman *Houston, Texas*
Dickey, Albert Thompson . . *Houston, Texas*
Dill, Frank Curtis . . . . . *Monroe, Louisiana*
Dinsmoor, Gordon Holt . . . *San Antonio, Texas*
Dishroon, John Wesley . . . *Houston, Texas*
Dixon, Virgil Anthony . . . . *Streator, Illinois*
Douty, Truman Benjamin . . *Houston, Texas*
Drake, Kathleen Margaret . . *Houston, Texas*
Driscoll, Thomas Cureo . . . *Houston, Texas*
Driscoll, Victor Amadale . . . *Houston, Texas*
Dunaway, Edmund Louis . . *Italy, Texas*
Dunn, Marjorie . . . . . *Houston, Texas*
Dutson, Keith John Fryer, Jr. *League City, Texas*
Enck, Henry Gus . . . . . *Marion, Texas*
Evans, Junius Anthony . . . *Houston, Texas*
Fallis, Ethel Lois . . . . . *Houston, Texas*
Farnsworth, Warriner Mills . *Fairbanks, Texas*
Farris, Edgar Alfred . . . . . *Dallas, Texas*
Ferguson, Mary Marshall. . . *Houston, Texas*
Fite, James Albert . . . . . *Houston, Texas*

Fonville, Irma Dorothy . . . *Houston, Texas*
Forbes, Edward King . . . . *Electra, Texas*
Foster, Frances Bell . . . . . *Houston, Texas*
Foy, Howell Greer . . . . . *Dallas, Texas*
Frachtman, Hirsh Julian . . . *Houston, Texas*
George, Wiley Ransom . . . *Houston, Texas*
Gintz, Walter, Jr. . . . . *Nacogdoches, Texas*
Gleaves, Leonard Lee . . . . *Dallas, Texas*
Goldstein, Gladys . . . . . *Houston, Texas*
González, Olivia . . . . . *Houston, Texas*
González, Pablo, Jr. . . . . *San Antonio, Texas*
Goodman, Hazel Eileen . . . *Houston, Texas*
Goss, Eula Aurelia . . . . . *Houston, Texas*
Grant, James David . . . . . *Houston, Texas*
Grauer, David . . . . . *Houston, Texas*
Gready, Thomas Gerald, Jr. . *Houston, Texas*
Green, Sue Virginia . . . . . *Houston, Texas*
Grenader, Meyer . . . . . *Houston, Texas*
Griffin, Sufarah Augusta . . . *Houston, Texas*
Griffitts, Velma Ann . . . . . *Dayton, Texas*
Guion, Naomi Marguerite . . *Houston, Texas*
Gutierrez, Margaret . . . . . *Houston, Texas*
Gwin, Gilmore Taylor, Jr. . . *San Antonio, Texas*
Hale, Thomas Herman . . . *Houston, Texas*
Hale, Weldon Raymond . . . *Smithville, Texas*
Halpin, Frank Cornelius . . . *Beaumont, Texas*
Hamblen, Marian Isabelle . . *Houston, Texas*
Hamilton, Robert Spence . . *Houston, Texas*
Hammett, Lee Horton . . . . *Ranger, Texas*
Hancock, Joseph Bruce. . . . *El Campo, Texas*
Hander, Edwin John . . . . *Waco, Texas*

Hannon, Robert James . . . *Houston, Texas*
Harbordt, Henry Aves . . . . *Monterrey, Mexico*
Harbour, Ray . . . . . *Goose Creek, Texas*
Harris, Odis Franklin . . . . *Marshall, Texas*
Harrison, Jeannette . . . . . *De Ridder, Louisiana*
Harrison, Kirk Henry . . . . *Houston, Texas*
Hart, Raymond . . . . . *Streator, Illinois*
Hassell, Louis . . . . . *Wallingford, Connecticut*
Hein, August Oscar . . . . . *Laredo, Texas*
Herndon, Raymond Fitzhugh . *Houston, Texas*
Hibbler, Marshall Edward . . *Houston, Texas*
Hill, Edwin Oscar . . . . . *Houston, Texas*
Hill, Louie Dee . . . . . *Gilmer, Texas*
Hilliard, Fay . . . . . *Houston, Texas*
Hilliard, Winnie Helen . . . . *Houston, Texas*
Hoag, Herbert Howard . . . *Jennings, Louisiana*
Hogge, Dorothy Pauline . . . *Houston, Texas*
Holden, Henry Matthews, Jr. *Houston, Texas*
Holloway, Edward Leroy . . *Lufkin, Texas*
Holmes, Lloyd . . . . . *El Campo, Texas*
Houchins, Mary Lucile . . . *Houston, Texas*
Houx, Betty Louise . . . . . *Houston, Texas*
Hovas, Edward Manuel . . . *Houston, Texas*
Howze, Henry Garrott . . . . *Houston, Texas*
Hrivnatz, Harry Gus . . . . *Houston, Texas*
Hudson, James Davidson . . *Houston, Texas*
Hull, Wayne Clifford. . . . . *Houston, Texas*
Hunt, Clair McDonald . . . *West Monroe, Louisiana*
Hurley, Frank House . . . . *Houston, Texas*
Illes, George Maximilian . . . *Dallas, Texas*
Imber, Joseph Robert . . . . *Houston, Texas*

Isbell, Frances LaNelle . . . *Houston, Texas*
Jackson, Ben Franklin . . . . *Coleman, Texas*
Jahn, Louis Theodore . . . . *Houston, Texas*
Jahnke, Henry August . . . . *Houston, Texas*
James, Delwin Vernon . . . . *Houston, Texas*
James, William Betis . . . . *Houston, Texas*
Jarvis, Mary Virginia . . . . *Houston, Texas*
Johnson, Everett Lynn . . . *Texarkana, Texas*
Jones, Fred Butler . . . . . *Taft, Texas*
Jordan, Zelma Keel . . . . . *Houston, Texas*
Jorden, Oliver Reeves . . . . *Houston, Texas*
Katribe, Paul James . . . . . *Houston, Texas*
Kaufman, David Samuel . . . *Houston, Texas*
Kehl, Christian Horace, Jr. . *Waco, Texas*
Kellogg, Henry Maris . . . . *Houston, Texas*
Kennedy, James William, Jr. . *Houston, Texas*
Kennedy, Mary Elender . . . *Houston, Texas*
Kimbro, Robert Willis . . . . *Cleburne, Texas*
Kinzer, Edward Frank . . . . *Houston, Texas*
Klaerner, Chester Charlie Felix *Fredericksburg, Texas*
Klappenbach, Ernst Karl . . *New Braunfels, Texas*
Koch, Melton . . . . . *Temple, Texas*
Krafcheck, Moses Nathan . . *Houston, Texas*
Kuhn, Carl Sellner, Jr. . . . *Houston, Texas*
Kuntscher, Josephine Hewig . *Houston, Texas*
Lastrapes, Richard Leon . . . *Washington, Louisiana*
Leavell, Lulu Lawton . . . . *Houston, Texas*
Lederer, Paul Alois . . . . . *Houston, Texas*
Lee, James Garrity . . . . . *Houston, Texas*
Lee, Kenneth Everett . . . . *Temple, Texas*
Lee, Melba Elizabeth . . . . *Houston, Texas*

Le Van, Clifton Arthur . . . *Dallas, Texas*
Lewis, John Silas . . . . . *Frederick, Oklahoma*
Lively, Thomas Lewis . . . . *Seymour, Texas*
Lomanitz, Benjamin Feld . . *Oklahoma City, Oklahoma*
Long, William Retzer . . . . *Houston, Texas*
Loughridge, Ruth Orlean . . *Houston, Texas*
Lovejoy, Daniel Bayne . . . *Houston, Texas*
Lucy, Aline Cleveland . . . . *Houston, Texas*
Ludtke, Hazel Rose . . . . . *Houston, Texas*
McArthur, Malden . . . . . *Beaumont, Texas*
McCarble, George Marshall . *Houston, Texas*
McCarty, George Madison . . *Houston, Texas*
McCollum, Gilbert C., Jr. . . *Houston, Texas*
McDavid, Patrick Mayes . . *Seymour, Texas*
McDonald, Dorothy Carrolyn *Houston, Texas*
McDonald, Weldon Chester . *Houston, Texas*
McFadyen, Louis Celestine . . *Greenville, Pennsylvania*
McGary, Miriam Khadijah . . *Houston, Texas*
McKinney, William Worle . . *Houston, Texas*
McKinnon, James Thomas . . *Amarillo, Texas*
McNeill, Earl Leon . . . . . *Houston, Texas*
McNutt, Floyd Lee . . . . . *Little Rock, Arkansas*
Madden, Mary Louise . . . . *Houston, Texas*
Magness, Bertis Ayres . . . . *Breckenridge, Texas*
Maguire, Margaret Elizabeth . *Houston, Texas*
Mansfield, Tommie Grace . . *Houston, Texas*
Marshall, Arthur Watson . . *Anahuac, Texas*
Martin, Everett Clinton . . . *Beaumont, Texas*
Martinkus, Anton Joseph . . *Spring Valley, Illinois*
Mason, Harry John . . . . . *Houston, Texas*
Mason, Monroe James . . . . *Houston, Texas*

Mattiza, Charles August . . . *Houston, Texas*
May, Edna Clyde . . . . . *Houston, Texas*
May, Herbert . . . . . *Memphis, Texas*
May, Lee . . . . . *Memphis, Texas*
Meyer, Leota Guenard . . . *Houston, Texas*
Meyer, Marjorie. . . . . *Houston, Texas*
Miller, Sam Irving, Jr. . . . . *Houston, Texas*
Mintz, Isadore Isie . . . . . *Houston, Texas*
Montgomery, Charles Franklin *Breckenridge, Texas*
Moody, Alvin Scheler, Jr. . . *Houston, Texas*
Morcom, Robert Sparke . . . *Houston, Texas*
Morgan, William Oliver . . . *Denison, Texas*
Morris, Mary Martha . . . . *Houston, Texas*
Morrison, Will Earl Tristram . *Houston, Texas*
Morriss, Margaret Coleman . *Houston, Texas*
Morrow, Walter Kyle, Jr. . . *Houston, Texas*
Mueller, Bert A. . . . . *Caldwell, Texas*
Murphy, Robert Emmet . . . *Houston, Texas*
Nabers, Robert Lee . . . . . *Vernon, Texas*
Nathan, Charles David . . . *Houston, Texas*
Nealy, Vincent Lee . . . . . *Houston, Texas*
Neveux, Joe Leonard . . . . *Houston, Texas*
Newcomer, Ralph . . . . . *Iowa, Louisiana*
Newman, Eva Louise . . . . *Houston, Texas*
Nicholson, Gordon Baker, Jr. . *Houston, Texas*
Nixon, Richard Lee . . . . . *Houston, Texas*
Norman, Harry Scott . . . . *Houston, Texas*
Northcutt, Percy Davis . . . *McAllen, Texas*
O'Leary, Mildred Catherine . *Houston, Texas*
Oliphint, Joseph B., Jr. . . . *Webster, Texas*
O'Neill, Haylett, Jr. . . . . *Houston, Texas*

Osburn, George Olando . . . *Shreveport, Louisiana*
Osterman, Hugo Victor . . . *Zacatecas, Mexico*
Otto, Adine Florence . . . . *Houston, Texas*
Parham, Sam Lamantine . . . *Houston, Texas*
Parish, Duke Lyle . . . . . *Houston, Texas*
Pasche, Herbert Alden . . . . *Houston, Texas*
Patton, Edward Nash . . . . *Mineral Wells, Texas*
Peeler, Winston Snyder . . . *Dallas, Texas*
Powell, Charles Fred . . . . *Tyler, Texas*
Powell, John Edwin . . . . . *Houston, Texas*
Power, Jack Bennett . . . . *Henrietta, Texas*
Prescott, Ben Moore, Jr. . . . *Houston, Texas*
Provine, Ruth Bernice . . . . *Houston, Texas*
Ragland, Douglas . . . . . *San Antonio, Texas*
Randlett, Edward Atkinson . *Lancaster, Texas*
Raney, Elizabeth Virgil . . . *Texarkana, Texas*
Reed, Clarence Hand . . . . *Houston, Texas*
Reed, James Ella, Jr. . . . . *Houston, Texas*
Reeves, Jack Horace . . . . *Houston, Texas*
Richards, Bertrand Field . . . *Newton, Illinois*
Richmond, Stanley Moore . . *Dallas, Texas*
Richter, Paul Alexander . . . *Dallas, Texas*
Ricks, Mary Virginia . . . . *Houston, Texas*
Riley, Mamie Elizabeth . . . *Houston, Texas*
Robinson, Robert George . . *Houston, Texas*
Rodell, John Restoff . . . . . *Hearne, Texas*
Rogers, Paul Eugene . . . . *Houston, Texas*
Rohrer, George Edward . . . *Houston, Texas*
Roos, Rutherford Bartholomew, Jr. . . . . *Victoria, Texas*
Rose, Jeannette Estelle . . . *Houston, Texas*

Rose, William Barry . . . . *Houston, Texas*
Rucker, Mary Louise . . . . *Houston, Texas*
Russell, Thomas Nelson . . . *Temple, Texas*
Ryman, Eldridge Baltes . . . *Houston, Texas*
Sanderford, Frances Wilson . *Houston, Texas*
Sanders, Kenneth Noelin . . . *Austin, Texas*
Scott, Hugh Lenox . . . . . *Houston, Texas*
Scott, Walter Tandy . . . . *San Antonio, Texas*
Sellers, Blake Manor . . . . *Austin, Texas*
Sewell, Ben Gardner . . . . . *Houston, Texas*
Sewell, Roy Calvin, Jr. . . . *Houston, Texas*
Sexton, Sue Elizabeth . . . . *Houston, Texas*
Shannon, Richard Maxfield . *Houston, Texas*
Shapiro, Samuel Jacob . . . . *Houston, Texas*
Shaw, Charles Winton . . . . *Houston, Texas*
Shofstall, John William . . . *Houston, Texas*
Shurtleff, John Ralph . . . . *Colorado, Texas*
Shutt, William Franklin, Jr. . *Laredo, Texas*
Silberstein, Milton Lenard . . *Marshall, Texas*
Simons, Madeline Shelby . . *Bay City, Texas*
Sims, Evelyn Virginia . . . . *Houston, Texas*
Sims, John LeRoy . . . . . *Houston, Texas*
Singleton, Paul Abney . . . . *Lufkin, Texas*
Smith, Ara Virginia . . . . . *Houston, Texas*
Smith, Egmont Schermerhorn,
Jr. . . . . *Dallas, Texas*
Soule, Gardner Bosworth . . *Houston, Texas*
Stallworth, Thomas William . *Houston, Texas*
Starr, Josephine Elizabeth . . *Houston, Texas*
Stout, Richard Elwood . . . *Houston, Texas*
Stratton, Dan Powell . . . . *Houston, Texas*

Street, Elizabeth Speed . . . *Houston, Texas*
Strong, William Randolph . . *Houston, Texas*
Strozier, William Enloe . . . *Houston, Texas*
Stuart, Marguerite Bitting . . *Houston, Texas*
Sullender, William Abraham . *Houston, Texas*
Sullivan, Maurice Joseph . . *Houston, Texas*
Suttle, Betty Lloyd . . . . . *Corsicana, Texas*
Tartakov, Della . . . . . *Houston, Texas*
Taubenhaus, Leon Jair . . . *College Station, Texas*
Taylor, Frederick . . . . . *Midland, Texas*
Taylor, Lewis Ridgway. . . . *Houston, Texas*
Thagard, Warren Thomas . . *Groveton, Texas*
Theis, Ralph Harold . . . . *Houston, Texas*
Thompson, John Lee . . . . *Ranger, Texas*
Thrasher, John Delia . . . . *Houston, Texas*
Tinnerello, John Lewis . . . . *Dallas, Texas*
Triplett, George Holman, Jr. . *Houston, Texas*
Tunstall, Harry Marcus . . . *Corpus Christi, Texas*
Turner, Helen Elizabeth . . . *Angleton, Texas*
Turner, Willie Claire . . . . *Gainesville, Texas*
Tuttle, Mae Margaret . . . . *Houston, Texas*
Vaughan, Herschel McCarver *Abilene, Texas*
Vieweger, Vivian Alene . . . *San Antonio, Texas*
Vinson, Virginia . . . . . *Houston, Texas*
von Johnson, George Alfred
Schmidt . . . . . *Galveston, Texas*
von Johnson, Kurt Schmidt . *Galveston, Texas*
Walker, Louise Laing . . . . *Houston, Texas*
Wallace, Frank, Jr. . . . . *Waco, Texas*
Wannall, Emma Lois . . . . *Houston, Texas*
Waring, Orville Taylor . . . *San Angelo, Texas*

Warren, John Burroughs . . . *Houston, Texas*
Watson, Howell Hoxie . . . . *Dallas, Texas*
Weichert, Minnie Adella . . . *Welsh, Louisiana*
Weiner, Max . . . . . *Houston, Texas*
Welhausen, Philip, Jr. . . . . *Yoakum, Texas*
Wells, Benson Goff . . . . . *Goliad, Texas*
West, Doyle Lyndon . . . . *Corsicana, Texas*
White, Vera Hazel . . . . . *Humble, Texas*
Whitt, Iván . . . . . *San Antonio, Texas*
Wiesenthal, Albert . . . . . *Houston, Texas*
Wigren, Harold Ellsworth . . *Houston, Texas*
Wilkie, Lewis Andrew, Jr. . . *Forney, Texas*
Williams, Annie Reid . . . . *Houston, Texas*
Williams, Walter Lee . . . . *San Marcos, Texas*
Williamson, Lee Henson . . . *Cisco, Texas*
Wilson, Letha Marion . . . . *Houston, Texas*
Wiseman, Paul Wayman . . . *Houston, Texas*
Witherspoon, John Preston . . *Strawn, Texas*
Wolf, Paul Hunter . . . . . *Houston, Texas*
Woodard, James Homer, Jr. . *Houston, Texas*
Worden, Sam Paul . . . . . *Tulsa, Oklahoma*
Zeloski, William Stanislaus . . *Fort Worth, Texas*
Zirbel, Lura Nadyne . . . . *Houston, Texas*

FRESHMEN*

Adams, Clarence Wesley . . . *Houston, Texas*
Adams, Joe Murry . . . . . *Dallas, Texas*
Adams, Louis Carroll . . . . *Longview, Texas*
Aderman, Carle Beverly . . . *Houston, Texas*
Aleo, Joseph Patrick . . . . *Houston, Texas*

*As classified October 1st, 1930

Alexander, Susie Rose . . . . *Houston, Texas*
Allen, Elmer Glenn . . . . . *Frost, Texas*
Allen, Robert Frederick . . . *Houston, Texas*
Allen, Travis Jerome . . . . *Yoakum, Texas*
Alter, Fred Cunningham . . . *San Antonio, Texas*
Anderson, Robert Edward . . *Pine Bluff, Arkansas*
Andrews, Robert Horace . . . *Dallas, Texas*
Arai, Eiko . . . . . *Genoa, Texas*
Arnold, Lida Lacy . . . . . *Houston, Texas*
Arthur, Percy . . . . . *Houston, Texas*
Ashburn, Mary Lee . . . . . *Houston, Texas*
Aucoin, Anthony Andrew . . *Houston, Texas*
Ault, Charles Aaron . . . . . *Houston, Texas*
Baker, Cary . . . . . *Houston, Texas*
Ballew, Albert Edwin . . . . *Houston, Texas*
Banks, Wallace Greene . . . *Houston, Texas*
Barden, Gertrude Elizabeth . *Houston, Texas*
Barron, Nell . . . . . *Houston, Texas*
Barry, Ruth Elizabeth . . . . *Houston, Texas*
Barton, William Andrew . . . *Mercedes, Texas*
Bauer, Jewel Antoinette . . . *Houston, Texas*
Beckham, Peyton Winfred . . *Lufkin, Texas*
Beckmann, Alice Ellen . . . . *El Campo, Texas*
Bell, Frances Louise . . . . . *Richmond, Texas*
Bennett, Lois Ethel . . . . . *Humble, Texas*
Bentz, Isadore Clarence . . . *Francitas, Texas*
Billert, Gladys Anna Elizabeth *Houston, Texas*
Bisbey, Joseph Blackard . . . *Houston, Texas*
Black, Mary Alberta . . . . *Houston, Texas*
Blair, Huber Dee . . . . . *Houston, Texas*
Blondeau, Eleanor Irene . . . *Goose Creek, Texas*

Bobb, Pearl Harriet . . . . . *Houston, Texas*
Bock, Isabelle . . . . . *Houston, Texas*
Bodin, Joseph Burton . . . . *Kingsville, Texas*
Boone, James Paul . . . . . *Dallas, Texas*
Boone, William Jefferson . . . *Fort Worth, Texas*
Borgstrom, Floreine Anthea . *Houston, Texas*
Born, Hortense O'Leary . . . *Dallas, Texas*
Bourne, Harold Charles . . . *Houston, Texas*
Bowen, Sara Lenoir . . . . . *Houston, Texas*
Bowling, Leslie Raymond. . . *Houston, Texas*
Boyd, Alice Lynn . . . . . *Houston, Texas*
Boyles, Howard . . . . . *Houston, Texas*
Brandenberger, Frances Mae . *Houston, Texas*
Breeding, Clark Walker, Jr. . *Houston, Texas*
Briggs, Cornelia Peyton . . . *Houston, Texas*
Briseño, Benjamin, Jr. . . . . *Houston, Texas*
Brogdon, Vas Hubert, Jr. . . *Houston, Texas*
Brookshire, Hazel Munn . . . *Houston, Texas*
Browne, Marguerite Annie . . *Houston, Texas*
Bruhl, Donald Adolphus . . . *Llano, Texas*
Bruner, Glen Wood . . . . . *San Juan, Texas*
Bryan, Hampton Ashley . . . *Houston, Texas*
Bryson, Louise . . . . . *Houston, Texas*
Burke, William Francis . . . *Dallas, Texas*
Butcher, Ernest Dell . . . . *Houston, Texas*
Buxton, Eva Mae . . . . . *Houston, Texas*
Cabaniss, Lowell James . . . *Lockhart, Texas*
Caldwell, Louise Ardrey . . . *Houston, Texas*
Calvin, Howard Roach . . . *Houston, Texas*
Campbell, Theodore Clinton . *Abilene, Texas*
Carnes, Sam Abbott . . . . . *Dallas, Texas*

Carothers, Jacqueline Lois . . *Houston, Texas*
Carson, Xylander . . . . . *Dallas, Texas*
Cashman, John Edgar . . . . *Houston, Texas*
Casstevens, Amand Louis . . *Sweetwater, Texas*
Castle, Margaret Florence . . *Fort Sam Houston, Texas*
Cavitt, Mary Elizabeth . . . *Houston, Texas*
Cecalek, Milton . . . . . *Houston, Texas*
Chamberlin, James Allen . . . *Houston, Texas*
Chaney, Francis Merwyn . . *Houston, Texas*
Christian, Frances Louise . . *Houston, Texas*
Christy, Oliver Perry, Jr. . . *La Porte, Texas*
Clark, Andrew Jackson, Jr. . *Temple, Texas*
Clarke, William Stephens . . *Houston, Texas*
Claypool, Martha Jane . . . *Houston, Texas*
Clemens, Robert Weidmier . . *Houston, Texas*
Clore, Henry Andrew . . . . *Beaumont, Texas*
Clugston, Harvey Rodney . . *Lake Charles, Louisiana*
Cole, Benjamin Morrison . . *Houston, Texas*
Collier, Ferne Alice . . . . . *Houston, Texas*
Collier, Frances Alene . . . . *Houston, Texas*
Collinson, Ina Lorene . . . . *Tupper Lake, New York*
Connell, Ruth . . . . . *Gilmer, Texas*
Conner, Ralph Melvin . . . . *San Antonio, Texas*
Cook, John Edward . . . . . *Houston, Texas*
Copeland, John Massie . . . *Houston, Texas*
Coskey, George Alfred . . . . *Houston, Texas*
Cowley, Stanislaus Peter . . . *Houston, Texas*
Cox, Walter Owen . . . . . *Houston, Texas*
Crossett, Alfred Harold . . . *Dallas, Texas*
Cutler, Kenneth Marks . . . *Arkadelphia, Arkansas*
Daley, Dorothy Moulton . . *Houston, Texas*

Daniel, Charles Henry, Jr. . . . *Houston, Texas*
Davis, James Gayland . . . . *Cleburne, Texas*
Davis, Mary Elizabeth . . . *Houston, Texas*
Dedman, Elizabeth Mae . . . *Houston, Texas*
Dee, James Grogan Valentinis . *Houston, Texas*
Dennett, Jessie Glenn . . . . *Houston, Texas*
Dissen, Shirley Louise . . . . *Houston, Texas*
Dodd, Lavon Couch . . . . . *Houston, Texas*
Doehring, Sweeney Jamison . *Houston, Texas*
Doggett, Thomas John . . . *Weimar, Texas*
Donald, Thomas Burdine . . *Houston, Texas*
Donoghue, Vincent Stafford . *Houston, Texas*
Dooley, Arthur Rhew . . . . *Beaumont, Texas*
Doré, John Lind . . . . . *Houston, Texas*
Douglas, Earle Cousart . . . *Houston, Texas*
Duckett, Elizabeth Anne . . . *Houston, Texas*
Dunlap, Albert Daniel . . . . *Breckenridge, Texas*
Dunlap, Marian Margaret . . *Houston, Texas*
Dunlap, Ormond Earl . . . . *Houston, Texas*
Dunlap, W. C., Jr. . . . . *Houston, Texas*
Dunn, Edna . . . . . *Metropolis, Illinois*
Dunn, Margaret Joseph . . . *Houston, Texas*
Dvorak, John Jerry . . . . . *Houston, Texas*
Eckman, Walter . . . . . *Houston, Texas*
Eddy, LeRoy Benton . . . . *Fredonia, New York*
Edge, Hudson Robert . . . . *Houston, Texas*
Ehlert, Lalla Lee . . . . . *Houston, Texas*
Elliot, Norma Claire . . . . *Houston, Texas*
Elliott, Card Garnett, Jr. . . *Houston, Texas*
Engelhardt, Hugo Tristram . *Houston, Texas*
Engels, Robert Maximillian . *Houston, Texas*

Ennis, Malcolm Eugene . . . *Mexia, Texas*
Evans, David Hamilton . . . *Houston, Texas*
Everheart, Mary Eleanor . . *Kerens, Texas*
Everts, Jane Marian . . . . *Houston, Texas*
Falk, Bessie Frances . . . . . *Houston, Texas*
Farquhar, Sam, Jr. . . . . *Hempstead, Texas*
Feder, Leon . . . . . *Houston, Texas*
Fetzer, Lewis Albert . . . . . *Dallas, Texas*
Fields, Dorothy Eva . . . . *Houston, Texas*
Finn, Alfred Charles . . . . . *Houston, Texas*
Fleming, John Barton . . . . *Houston, Texas*
Flowers, Elliott Galetin . . . *Houston, Texas*
Fooshee, Anna Margaret . . . *Houston, Texas*
Ford, Thomas Washington . . *Houston, Texas*
Foreman, Hugh Graham . . . *Livingston, Texas*
Frazer, Susie Permelia . . . . *Alief, Texas*
Freeman, Madeline Ethel . . *Houston, Texas*
Frost, Maunie. . . . . *Houston, Texas*
Frye, Jack . . . . . *Houston, Texas*
Fullick, Raymond Edgar . . . *Clinton, Iowa*
Garner, J. P. . . . . *Houston, Texas*
Gassiot, Rankin Arsiene . . . *Livingston, Texas*
Gautreaux, Lawrence Emile . *Houston, Texas*
Geiselman, Grover Joseph . . *Houston, Texas*
Geyer, Ferdinand . . . . . *Dallas, Texas*
Gillespie, Horace Ford . . . . *Nacogdoches, Texas*
Gillett, Donald Bockoven . . *Welsh, Louisiana*
Gillette, Marguerite Aileen . . *Houston, Texas*
Glover, Frank Scott . . . . . *Houston, Texas*
Glover, Hazel Florene . . . . *Houston, Texas*
González, Alvaro Gustavo . . *Tamps, Mexico*

Goolsbee, John Smith . . . . *Houston, Texas*
Graeter, Arthur Herman . . . *Houston, Texas*
Green, Sydney Herbert . . . *Houston, Texas*
Gribble, Risdon Oliver . . . . *Nacogdoches, Texas*
Hall, Corinne Elizabeth . . . *Houston, Texas*
Hall, Martha Louise . . . . . *Houston, Texas*
Hall, Peggy . . . . . *Houston, Texas*
Hallman, Ralph Jefferson . . *Midland, Texas*
Hallum, John Stewart . . . . *Brady, Texas*
Hamilton, Eugenia . . . . . *Houston, Texas*
Hamilton, James Brooke, Jr. . *Houston, Texas*
Haner, Thomas Edward . . . *Houston, Texas*
Hans, Edward Walter . . . . *Houston, Texas*
Hansen, Evelyn Lucille. . . . *Houston, Texas*
Harris, Jack Winfield . . . . *Houston, Texas*
Hartwell, John Haskins . . . *Houston, Texas*
Hedrick, Mary Emmie . . . . *Houston, Texas*
Heinrich, Raymond Lawrence *Houston, Texas*
Heinze, Marguerite Theresa . *Houston, Texas*
Henderson, Frances Nell . . *Hobby, Texas*
Hensley, Mary Bodine . . . . *Houston, Texas*
Henson, Mary Beatrice . . . *Trinity, Texas*
Henson, Robert Lee . . . . . *Yoakum, Texas*
Hernandez, Rafael Gonzalez. . *Mexico City, Mexico*
Herndon, Thomas Busey . . . *Houston, Texas*
Heyck, Leonora Thomas . . . *Houston, Texas*
Higginbotham, Sanford Wilson *Fordyce, Arkansas*
Hightower, Leonard Elmore . *Eastland, Texas*
Hingle, Frances Elizabeth . . *Houston, Texas*
Hitt, Orin Broughton . . . . *Houston, Texas*
Hoeflich, Werner Frank . . . *Houston, Texas*

Holcomb, Norman Franklin . *Houston, Texas*
Holcomb, Philip Rhoads . . . *Houston, Texas*
Hornor, Elizabeth Katherine . *Ardmore, Oklahoma*
Huddleston, Mary Beth . . . *Houston, Texas*
Ingram, Baker Bunyan . . . *Houston, Texas*
Jackson, Ewell Horner . . . . *Houston, Texas*
Jackson, R. Graham . . . . . *Houston, Texas*
Jacobs, Henry Marcus . . . . *Dallas, Texas*
Jauckens, Julius, Jr. . . . . *Monterrey, Mexico*
Jefferies, David Hammond, Jr. *Abilene, Texas*
Jessup, William Jennings . . . *Houston, Texas*
Johnson, Harold . . . . . *Smithville, Texas*
Johnson, Pauline Faye . . . . *Houston, Texas*
Johnson, Robert Lee . . . . *Houston, Texas*
Jones, Joseph Ramon . . . . *San Angelo, Texas*
Jones, John Bernard . . . . . *Sugarland, Texas*
Jones, Roy Victor . . . . . *Weinert, Texas*
Jordan, Roland Webster . . . *Fort Worth, Texas*
Judd, Wallace Morgan . . . . *Pittsburgh, Pennsylvania*
Jungbecker, Robert Ervin . . *Houston, Texas*
Kaplan, Herman . . . . . *Houston, Texas*
Keating, Gladys Mary . . . . *Houston, Texas*
Kellersberger, Laurence Kawabe *Houston, Texas*
Kellogg, Elizabeth . . . . . *Houston, Texas*
Kennedy, Ross . . . . . *Sabinal, Texas*
Kent, Irvin . . . . . *Houston, Texas*
Kesseler, Forrest Argyle, Jr. . *Houston, Texas*
King, George Merritt, III . . *Kinder, Louisiana*
Kivell, Bert Haworth . . . . *Houston, Texas*
Klaras, John George . . . . . *Houston, Texas*
Knight, Dewitt John . . . . *Port Arthur, Texas*

Knodel, Miriam Elizabeth . . *Houston, Texas*
Knostman, Jack Wellington . *Davenport, Iowa*
Koch, Arthur Charles . . . . *Houston, Texas*
Kocurek, Joe Arthur . . . . *Houston, Texas*
Koehler, Louis Franklyn Earlan *Houston, Texas*
Kost, Joseph Phillip . . . . . *Houston, Texas*
Kotin, Ben Joseph . . . . . *Galveston, Texas*
Krantz, Abe David . . . . . *Houston, Texas*
Kroeger, William Carl . . . . *Houston, Texas*
Kroschel, Fred Michael, Jr. . *Houston, Texas*
Lacy, Ida Dell . . . . . *Houston, Texas*
Lagow, Fay Donald . . . . . *Dallas, Texas*
Lagow, Joe Langley . . . . . *Dallas, Texas*
Lancaster, Edgar Henry . . . *Houston, Texas*
Lancaster, Elizabeth Ross . . *Houston, Texas*
Landau, Mila . . . . . *Houston, Texas*
Landau, Tola . . . . . *Houston, Texas*
Lauer, Edith Marie . . . . . *Houston, Texas*
Lauterbach, Fred August, Jr. . *San Antonio, Texas*
Lauterbach, Richard . . . . *San Antonio, Texas*
Lawson, Margaret Rose . . . *Houston, Texas*
Learned, Dorothy Carol . . . *Houston, Texas*
Leavell, Carrolyn Eleanor . . *Houston, Texas*
Lederer, Alois Charles . . . . *Houston, Texas*
Le Grand, Leslie Paris . . . . *Palestine, Texas*
Leifeste, Alonzo August, Jr. . *Houston, Texas*
Lenoir, Walter Frank, Jr. . . *Houston, Texas*
Lilliott, Richard Willoughby . *Houston, Texas*
Lilly, Jessica Azeline . . . . *Houston, Texas*
Lindsay, Malcolme Storey . . *Houston, Texas*
Lipnick, Ben . . . . . *Galveston, Texas*

Lloyd, Bryan Lee . . . . . *Texarkana, Texas*
Lockhart, Victor . . . . . *Pritchett, Texas*
Loggins, Mary Elizabeth . . . *Humble, Texas*
Lollar, Thomas Howard . . . *Pauls Valley, Oklahoma*
Long, Doris . . . . . *Houston, Texas*
Lovejoy, Rex Emmett . . . . *Houston, Texas*
Lowe, John Burford . . . . . *Dallas, Texas*
McCallie, Jack Ewing . . . . *Breckenridge, Texas*
McCants, Donald Bond . . . *Houston, Texas*
McClanahan, Edwin Thomas . *Hillsboro, Texas*
McConnell, Evelyn Nunn . . *Beeville, Texas*
McCullough, James Lawrence *Dallas, Texas*
McHenry, Wayne . . . . . *Greenville, Texas*
McMurrey, Ella Frances . . . *Houston, Texas*
McNeir, Stella Mary . . . . *Houston, Texas*
Majewski, Warner John . . . *Fort Sam Houston, Texas*
Marshall, Robert William . . *Houston, Texas*
Mason, Howard Irving . . . *Markham, Texas*
Mason, Samuel Alvin . . . . *Beaumont, Texas*
Massey, Marian Lucille . . . *Houston, Texas*
Matthews, Sara Louise . . . *Houston, Texas*
Mays, Howard Wright . . . . *Dallas, Texas*
Meadows, Henry Edward . . *San Angelo, Texas*
Mehr, Charlie Dexter . . . . *Houston, Texas*
Mercer, Charles LeRoy . . . *Fort Worth, Texas*
Meyer, Pauline Julienne . . . *Houston, Texas*
Mickelson, Harold Emanuel . *El Campo, Texas*
Middleton, Henry Lee . . . . *Houston, Texas*
Miller, Lamar . . . . . *Houston, Texas*
Miller, Ray Goodwin . . . . *Cisco, Texas*
Miller, Willard Crockett . . . *Cisco, Texas*

Mills, Irwin Allen, Jr. . . . . *Houston, Texas*
Modesett, John Harvey . . . *Shepherd, Texas*
Moore, Charles Hurtle . . . . *Houston, Texas*
Moore, Frank Aldrich . . . . *Houston, Texas*
Moore, Henry Paisley . . . . *Mexia, Texas*
Morris, Mary Virginia . . . . *Houston, Texas*
Morris, Weldon . . . . . *Houston, Texas*
Morrison, James Ronald . . . *Houston, Texas*
Moses, Alfred Tennyson . . . *Hewitt, Texas*
Mosk, Milton Stanford . . . *Houston, Texas*
Moss, Margaret Eugenia . . . *Houston, Texas*
Moyer, Rollo Nellis . . . . . *Houston, Texas*
Muller, Julien Pearson . . . . *Port Arthur, Texas*
Mummert, Danesi Jeanne . . *Houston, Texas*
Myer, Robert Wills . . . . . *San Antonio, Texas*
Myers, Harry, Jr. . . . . *Palestine, Texas*
Myers, Henry Brune . . . . *Houston, Texas*
Nabors, Theodore Edgar . . . *Houston, Texas*
Nachlas, Otto Melvin . . . . *Houston, Texas*
Nagai, Mary Aiko . . . . . *Angleton, Texas*
Nemir, Ralph . . . . . *Navasota, Texas*
Newberry, Claude Stanley . . *Childress, Texas*
Newsom, Jesse George . . . . *Weinert, Texas*
Nicholson, John Thomas . . . *Sinton, Texas*
Nicholson, William Frederick . *Houston, Texas*
Nolley, Robert Harold . . . . *Houston, Texas*
Norvick, Morris Caesar . . . *Wallis, Texas*
Nunn, John . . . . . *Waco, Texas*
O'Fiel, James Cyrus Dudley, Jr. *Houston, Texas*
Ogle, Andrew Mabry . . . . *Del Rio, Texas*
Oliphint, Mary Jacqueline . . *Houston, Texas*

Osburn, Inez Vivian . . . . . *Webster, Texas*
Oshman, Ben . . . . . *Richmond, Texas*
Overcash, Frances Stewart . . *Houston, Texas*
Pace, Hazel . . . . . *Houston, Texas*
Parker, Robert Franklin . . . *Anderson, Texas*
Parsons, Ethel Evelyn . . . . *Welsh, Louisiana*
Parsons, Jim Bill . . . . . *Dallas, Texas*
Patrick, Lois . . . . . *Itasca, Texas*
Payne, John Howard, Jr. . . *Dallas, Texas*
Payne, Olynn Kenneth . . . *Fort Worth, Texas*
Pearson, Gaynor B. . . . . *Kingsville, Texas*
Peña, Fernando Roberts . . . *Laredo, Texas*
Pennington, Margaret Mary . *Houston, Texas*
Percival, John Ronald . . . . *Ennis, Texas*
Perlitz, Annie Louise . . . . *Houston, Texas*
Peters, Isadore Donald . . . *Houston, Texas*
Peterson, Milton Virgil . . . *Rosenberg, Texas*
Petitfils, Ellen Elizabeth . . . *Houston, Texas*
Pickering, Edmund Ephriam . *Victoria, Texas*
Pitner, Roy Mitchell, Jr. . . . *Fort Worth, Texas*
Pollan, Elbert Vernon . . . . *Houston, Texas*
Poutra, Margaret Belle . . . *Houston, Texas*
Powell, Helene Yvonne . . . *El Campo, Texas*
Preston, Laurence Amandos . *Palestine, Texas*
Quebe, Frederick Henry . . . *Waco, Texas*
Ragan, Enid Louise . . . . . *Houston, Texas*
Ramey, Holland Henery . . . *Houston, Texas*
Rau, Wilma Merle . . . . . *Houston, Texas*
Rawlinson, Carlon R. . . . . *Littlefield, Texas*
Reindl, Edward Anthony . . *Houston, Texas*
Reingold, Leroy Matthews . . *Houston, Texas*

Reynolds, Howard Emmett . *Fredonia, New York*
Reynolds, Mary Helen . . . . *Houston, Texas*
Reynolds, Vining Towner . . *Houston, Texas*
Rice, John William . . . . . *Dallas, Texas*
Rice, Mary Calder . . . . . *Houston, Texas*
Rich, Martha Jane . . . . . *Houston, Texas*
Richards, Algie Cone . . . . *Houston, Texas*
Richardson, Dan . . . . . *San Antonio, Texas*
Richardson, Gerald Forrest . . *Beaumont, Texas*
Riddle, William Frazier . . . *Houston, Texas*
Riesen, Alberta Jean . . . . *Houston, Texas*
Rinehold, Hubert . . . . . *San Antonio, Texas*
Rittenberry, James Floyd . . *Amarillo, Texas*
Robinson, Thomas Aubrey . . *Houston, Texas*
Robinson, Webber Tryon . . *Houston, Texas*
Roos, Sigrid . . . . . *Houston, Texas*
Rosenthall, Herbert James . . *Houston, Texas*
Rourke, Robert B. . . . . *Centreville, Mississippi*
Rulfs, David Miller . . . . . *Houston, Texas*
Russell, Charles Robert . . . *Greenville, Texas*
Russell, Jimmy Metcalf . . . *San Angelo, Texas*
Sapp, James Hilbert . . . . . *West Palm Beach, Florida*
Satterfield, Lochatrice . . . . *Houston, Texas*
Schaffer, Henry . . . . . *Rosenberg, Texas*
Schelling, Joe Austin . . . . *Houston, Texas*
Schulze, Robert . . . . . *Temple, Texas*
Schwartz, Lois Bender . . . . *Houston, Texas*
Schwartz, Samuel Kent . . . *Houston, Texas*
Schwartz, Selma Frances . . . *Houston, Texas*
Scott, James Hunter . . . . *Houston, Texas*
Scott, Kelly. . . . . *Houston, Texas*

Scott, Roy Beverly . . . . . *Dallas, Texas*
Scruggs, Ray . . . . . *McGregor, Texas*
Seerden, Lawrence O'Connell . *Wadsworth, Texas*
Sexton, Lerah Hortense . . . *Houston, Texas*
Sharp, Waymon Clemo . . . *Eliasville, Texas*
Shaw, John Francis . . . . . *Mercedes, Texas*
Showers, George William, Jr. . *Houston, Texas*
Shult, Clarence Irwin . . . . *El Campo, Texas*
Simpson, Edith . . . . . *Houston, Texas*
Singleton, Robert Maas . . . *Lufkin, Texas*
Sledge, Willie Robert . . . . *Springfield, Missouri*
Slimpin, Melba Louise . . . . *Houston, Texas*
Slowata, Stanley Stevens . . . *Irvington, New Jersey*
Smith, Aubrey George . . . . *Houston, Texas*
Smith, Edgar Quincy . . . . *Houston, Texas*
Smith, Etha Louise . . . . . *Keltys, Texas*
Smith, Mary Lou . . . . . *Houston, Texas*
Smith, Thomas Wesley . . . *Houston, Texas*
Smith, William Dorrsett . . . *Houston, Texas*
Spikes, Russell Henry . . . . *La Porte, Texas*
Squyres, Charles Seaman . . *Cleburne, Texas*
Stagno, Felix Peter . . . . . *Houston, Texas*
Steele, Allan Trezevant. . . . *Houston, Texas*
Steen, Wiley Hall . . . . . *Houston, Texas*
Stephenson, Mildred . . . . *Houston, Texas*
Sterling, Gwendolyne . . . . *Houston, Texas*
Sternenberg, Pauline Emma . *Houston, Texas*
Steves, Awilda Eileen . . . . *Houston, Texas*
Steves, Frank John . . . . . *Bay City, Texas*
Stillman, Sybilla Ray . . . . *Houston, Texas*
Stonecipher, Clem Brooker . . *Houston, Texas*

Storey, Boude Erwin . . . . *Dallas, Texas*
Stover, Fred Weaver . . . . *Desdemona, Texas*
Sweeney, Jennie Valleria . . . *Houston, Texas*
Swift, Leroy Eagan . . . . . *Palestine, Texas*
Talley, Hallie Beth . . . . . *Houston, Texas*
Tallichet, Emilie . . . . . *Houston, Texas*
Tarrer, Emily Lyles . . . . . *Houston, Texas*
Taylor, Blanche Phillips . . . *Houston, Texas*
Taylor, William H. . . . . *Moody, Texas*
Terranella, Frank . . . . . *Dallas, Texas*
Thomas, Frances Moore . . . *Houston, Texas*
Thomas, James Oliver, Jr. . . *Fort Worth, Texas*
Thompson, Howard Martin . *Houston, Texas*
Thompson, Josephine Jordan . *Houston, Texas*
Thomson, Wilbur Fisk . . . . *Beaumont, Texas*
Tittle, Evelyn Grimes . . . . *Houston, Texas*
Townsen, Lillian Margaret . . *Houston, Texas*
Tracy, Albert Ray . . . . . *Lufkin, Texas*
Treschwig, Karl . . . . . *Houston, Texas*
Treybig, Benny . . . . . *Yoakum, Texas*
Tucker, Lemuel Ray . . . . *Houston, Texas*
Turner, Frank Shannon . . . *Angleton, Texas*
Van De Mark, Charles
Cleveland . . . . . *Concordia, Kansas*
Verlander, Genevieve . . . . *Houston, Texas*
Vickrey, Frank Norris . . . . *Houston, Texas*
Vidrine, Lawrence . . . . . *Port Arthur, Texas*
Vincin, Andrew . . . . . *Humble, Texas*
Vinson, Julia Elizabeth . . . *Houston, Texas*
Wagner, Herman . . . . . *Houston, Texas*
Walker, Cicero Graves . . . . *Crawford, Texas*

Wall, Alice Jane . . . . . *Houston, Texas*
Wallace, John Beavers . . . . *Gilmer, Texas*
Walter, Tommie Watson . . . *Houston, Texas*
Ward, Hubert Rawyer . . . . *Greenville, Texas*
Warfield, John Francis . . . . *Houston, Texas*
Wathen, John Love . . . . . *Dallas, Texas*
Watkins, Thomas Newton . . *Houston, Texas*
Wax, James Stratton . . . . *Houston, Texas*
Weaver, Earl Marshall . . . *Houston, Texas*
Weaver, Pearl Violet . . . . *Houston, Texas*
Webster, Dan George . . . . *Dallas, Texas*
Webster, James Franklin . . . *Houston, Texas*
Webster, William Platt . . . *Dallas, Texas*
Weichert, John Phillips . . . *Welsh, Louisiana*
Werlin, Samuel Garrow . . . *Houston, Texas*
Werner, Walter C. . . . . *Breckenridge, Texas*
West, Thomas Clifton . . . . *Dallas, Texas*
Wheelan, Mary Ruth . . . . *Houston, Texas*
White, Thomas Watson, Jr. . *Houston, Texas*
Whitworth, Rector Dain . . . *Smithville, Texas*
Wick, Dorothy Agnes . . . . *Houston, Texas*
Wiess, Le Vert . . . . . *Houston, Texas*
Wilhelm, Catherine Janice . . *Houston, Texas*
Wilkens, Lucian Minor . . . *Galveston, Texas*
Williams, Frederic Lee, Jr. . . *Glencoe, Illinois*
Williams, Jack Clarke . . . . *Beaumont, Texas*
Williams, Millard Horner . . *Marshall, Texas*
Williams, Milton . . . . . *Dallas, Texas*
Williams, Robert Garland . . *Fort Worth, Texas*
Williamson, William Joseph . *Houston, Texas*
Williford, Nora Louise . . . . *Houston, Texas*

Willy, Claire Shelton . . . . *Smithville, Texas*
Winterhalter, Rosa Lee . . . *Baytown, Texas*
Wise, Arthur Brown . . . . . *Houston, Texas*
Woodall, George Lee . . . . *Lufkin, Texas*
Woodson, Jacob Dudley . . . *Crockett, Texas*
Worrall, Marjorie Turner . . *Houston, Texas*
Wright, Charles Wentworth . *Lake Charles, Louisiana*
Wynne, Harrison Kelly . . . *Fort Worth, Texas*
Youngblood, Frank Powell, Jr. *Port Arthur, Texas*
Zenor, Margaret Wall . . . . *Houston, Texas*

INDEX