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

THE BOARD OF TRUSTEES
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CALENDAR

1927

September 12-15 . Entrance Examinations
September 15 . Registration of new students
September 16 . Registration of old students
September 19 . Opening of courses
September 21 . Matriculation address
November 24 . Thanksgiving Day
December 15-21 . Preliminary Examinations for Freshmen and students on probation

December 22 . Beginning of Christmas holidays

1928

January 2 . Resumption of courses
February 1-9 . February Examinations
February 22 . Washington’s Birthday
March 2 . Texas Independence Day
April 21 . San Jacinto Day
May 14-19 . Entrance Examinations
May 21-June 1 . Final Examinations
June 2-4 . Thirteenth 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 few months 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
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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 cooperation of an advisory committee consisting of Professor Ames, director of the physical laboratory of Johns Hopkins University; Professor Conklin, director of the biological laboratory of Princeton University; Professor Richards, chairman of the department of chemistry, Harvard University; and Professor Stratton, director of the National Bureau of Standards. 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 powerhouse, 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 occupied by the 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. The building schedule for the nearer future includes special laboratories for instruction and investigation in chemistry and biology, and in the application of these sciences to the arts of industry and commerce. 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.
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In the early autumn of 1912 an academic festival in observance of the formal opening of the Institute was held under most 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 arts, 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 Goss-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
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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. Glover, Public Orator of Cambridge University; those of the 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, and Sir Henry Hadow, Vice-Chancellor of the University of Sheffield; the Plymouth Tercentenary
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Lecture by 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 President Emeritus Charles William Eliot, of Harvard University; by Dean Frank Thilly, of Cornell University; and by President John Grier Hibben, of Princeton University.

THE FACULTY

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

Alejandro Arratia, B.A. (Chile), formerly Instructor at the Linceo Pedagojico, Santiago, Chile; later Assistant in Spanish at the Rice Institute; Instructor in Spanish.

Charles Flinn Arrowood, B.A. (Davidson College), B.D. (Union Theological Seminary), B.A. and M.A. (Rice), Ph.D. (Chicago), formerly Fellow in Education at the Rice Institute; Professor of Philosophy and Psychology at Southwestern Presbyterian University; later Instructor

1Arranged in alphabetical order, with last appointment before receiving academic appointment at this institution.
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in Education at the Rice Institute; Assistant Professor of Education.

Franklin Durham Ashcraft, B.A. (Greenville), formerly Director of Physical Education at Sam Houston State Teacher's College; Instructor in Physical Education.

Eugene Stanley Ault, B.E. (Johns Hopkins), M.M.E. (Cornell), formerly Instructor in Machine Design at Cornell University; Instructor in Mechanical Engineering.

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.

Frederick Lovell Bixby, B.A. (Clark), Ph.D. (Cornell), formerly Instructor in Psychology at Cornell University; Assistant Professor of Psychology.

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.

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
Asa Crawford Chandler, B.A. (Cornell), Ph.D. (California), formerly Assistant Professor of Zoology and Physiology at Oregon Agricultural College; Instructor in Biology at the Rice Institute; 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.

Arthur Herbert Copeland, B.A. (Amherst), Ph.D. (Harvard), formerly Assistant in Mathematics at Harvard University; 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.

Augusto Eyquem, Bachelor of Humanities (Chile), formerly Instructor in Spanish at Princeton University, later Assistant in Spanish at the Rice Institute; Instructor in Spanish.
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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.

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.

Gaston Gille, B.S. (Paris), Cert. Ped. (Paris), formerly Junior Professor at the State Normal School, Versailles, France; Instructor in French at the summer session of Cornell University; Instructor in French.

Stowell Coolidge Goding, B.A. (Dartmouth), M.A. (Harvard); Instructor in French.

Richard Fairfax Hamill, B.A. (Davis-Elkins), formerly Instructor in English at Davis-Elkins College; Instructor in English.

William Hartman, B.A. (Dartmouth), M.A. (Harvard); Instructor in English.
Arthur J. Hartsook, M.S. (Mass. Inst. Tech.), formerly Instructor in Chemistry at the University of Nebraska; Instructor in Industrial Chemistry.

Ray Nelson Haskell, B.S. (Chicago), formerly Instructor in Mathematics at the University of Tennessee and later at Michigan Agricultural College; Instructor in Mathematics.

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; later Instructor in Physics at the Rice Institute; Assistant Professor of Physics.

John William Heisman, LL.B. (Pennsylvania), formerly of the Department of Athletics at Georgia School of Technology, the University of Pennsylvania, and Washington and Jefferson College; Director of Athletics.

George D. Helm, B.S. (Oregon Agricultural College), M.A. (Univ. of Oregon), formerly Instructor in English at the Northern Arizona State Normal School; later Teaching Assistant in English at the University of Oregon; Instructor in English.

Gordon G. Hill, B.A. (Wesleyan); Instructor in English.


John Fred Jost, B.A. (Eden College), M.A. (Harvard), formerly Instructor in German at the University of North Carolina and at Trinity College, Hartford, Connecticut; Instructor in German.
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Walter Raymond Kirner, B.S. and M.S. (Illinois), Ph.D. (Harvard), formerly Assistant in Organic Chemistry at Harvard University; Associate Professor of Organic Chemistry at Middlebury College; later Instructor in Organic Chemistry at the Rice Institute; Assistant Professor of Organic Chemistry.

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.

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; later Instructor in English at the Rice Institute; Assistant Professor of English.

Edward W. Manchester, B.A. (Wesleyan); Instructor in English.

Szolem Mandelbrojt, D.Sc. (Paris), formerly Inter-
national Education Board Fellow in Mathematics; Lecturer in Mathematics.

Austin Mardon, M.A. (Trinity College, Cambridge); Lecturer in English History.

Edward Roy Cecil Miles, B.S. (Georgia Inst. Tech.), M.A. (Harvard), formerly Instructor in Mathematics at Georgia Institute of Technology, at the University of Georgia, at the United States Naval Academy, and at Harvard University; Instructor in Mathematics.

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.

Charles William Morris, Jr., B.S. (Northwestern), Ph.D. (Chicago), formerly Assistant in Philosophy at the University of Chicago; Instructor in Philosophy.

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

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

Samuel Albert Nock, B.A. (Haverford), M.A. (Carleton), formerly Instructor in English at Carleton College; Instructor in English.
ANNOUNCEMENTS

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

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; later Instructor in Mechanical Engineering at the Rice Institute; Assistant Professor of Mechanical Engineering.

Salomon A. Rhodes, Ph.D. (Cornell), formerly University Fellow in Romance Languages and later Instructor in French at Cornell University; Instructor in French and Spanish.

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

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

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

James Harry Smith, M.A. (Harvard), formerly Associate
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Instructor in Latin at Culver Military Academy; 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.

Clark Abram Warburton, B.A. (Cornell), formerly Assistant Research Statistician, Federal Reserve Bank; later Instructor in Economics at Ewing College, and Reader in Economics at the University of Allahabad, India, and editor-in-chief of the Indian Journal of Economics; subsequently research assistant with the Standard Statistics Company of New York and graduate student at Columbia University; Instructor in Economics.

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
ANNOUNCEMENTS

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

William E. 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.

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.

Canio Zarrilli, B.A. (Lafayette), M.A. (Columbia), formerly Instructor in French and Spanish at Waynesburg College; Instructor in Spanish.

ASSISTANTS AND FELLOWS

Edward Bowers Arrants, B.S. in Arch. (Rice); Fellow in Architecture.

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

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Ernest Eugene Blondeau, M.A. (Rice); Fellow in Physics.
Geoffrey Everett Cunningham, M.S. (Tulane), formerly Instructor in Chemistry in Tulane University; Fellow in Chemistry.
Alice Crowell Dean, M.A. (Rice); Fellow in Mathematics.
Edward Joseph Durham, B.A. (Reed), formerly Assistant Chemist with the Crown-Willamette Paper Company, Portland, Oregon; Fellow in Chemistry.
Nat Edmonson, M.A. (Austin College), formerly Assistant in Mathematics at Austin College; Fellow in Mathematics.
Jacques Jean Engerrand, B.A. (Texas); Assistant in French.
William Maurice Ewing, M.A. (Rice); Fellow in Physics.
John Jay Gergen, M.A. (Minnesota); Fellow in Mathematics.
Deborah May Hickey, M.A. (Rice); Fellow in Mathematics.
Clyde Roland Johnson, B.A. (Reed); Fellow in Chemistry.
Gordon Lee Locher, B.A. (Park College), M.A. (Rice), formerly Assistant in Physics at Park College; Fellow in Physics.
Guilford Leroy Mack, B.S. (Oregon State Agricultural); Fellow in Chemistry.
George Holmes Richter, M.A. (Rice), formerly Assistant in Chemistry at the Rice Institute; Fellow in Chemistry.

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Frank Wannall Stones, B.S. in Ch.E. (Rice); Graduate Assistant in Chemistry.

Fred Vernon Shelton, B.A. (Rice); Graduate Assistant in French.

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.
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THE HOENTHAL 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

With the Sharp Lectureship in Civics and Philanthropy founded by Mrs. Estelle B. Sharp, of Houston, there are associated four scholarships in civics and philanthropy. For the last academic year the scholarships were provided by Messrs. William L. Clayton, Will C. Hogg, 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 therefore. 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.
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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 ASSOCIATION OF RICE ALUMNI SCHOLARSHIP

The Association of Rice Alumni is maintaining an annual scholarship at the Rice Institute with the expectation of providing permanent endowment therefore. This scholarship is open to a young man student of the Rice Institute, the candidate to be selected by the faculty on grounds of scholarship, personality, physical vigor, and need. The present annual stipend of the Association of Rice Alumni 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 a young man or young woman student of the Freshman Class of the Rice
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Institute who receives the highest grades in that class, and the candidate is to be selected by the faculty. The first award of the Daniel Ripley Scholarship has been made for the academic year 1927–28.

TRAVELING FELLOWSHIP

Another Houston friend of youth and learning, who desires to remain anonymous, is donating to the Rice Institute the sum of $1500 annually as a stipend for a traveling fellowship, to be awarded to a graduate of the Rice Institute giving promise of leadership in scholarship and service, selected by the faculty. It is the donor's wish that in the choice of fellows there be no restriction with respect to special field of intellectual endeavor, but that the emphasis be laid on evidence of outstanding ability. The first award of the Traveling Fellowship has been made for the academic year 1927–28.

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.

FELLOWSHIPS

The Rice Institute would interpret in a large way its dedication to the advancement of letters, science, and art. It would not only look 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 should always be associated with the staff of the Institute a group of advanced students in training for careers both as teachers and researchers: with this end in view, graduate fellowships will be awarded from time to time to degree-bearing students of the Institute, or other educational foundations of similar standing.

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.

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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 TO THE FRESHMAN CLASS

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 in-

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.
crease 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 to the Freshman Class 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.

3. The division of students into still smaller groups 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 Freshmen in the Autumn of 1927.

The Rice Institute will accept four hundred Freshmen direct from high school in September, 1927. The total student body will thus consist of about thirteen hundred members, which was approximately the enrollment in September, 1926.
ANNOUNCEMENTS

In selecting the members of this 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,
THE RICE INSTITUTE

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; Zoölogy 1. Substitutes for certain of these subjects may be considered in individual cases.

Entrance examinations will be held at the Institute beginning September 12, 1927 and again during the week beginning May 14, 1928. 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 requirements 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. 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; and a deposit of twenty-five dollars for the junior and senior courses in Civil, Electrical, and Mechanical Engineering.

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 91 for nominal 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 sixteen 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 twenty 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 listed 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
ANNOUNCEMENTS

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 any one 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. Sara Stratford, 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 humanities, 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 coördinated 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 undertake 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, honors courses leading to the degree with honors in certain subjects. These two types will be referred to in the sequel as general courses and honors 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 therefore 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
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university teaching can be profitably undertaken. Students wishing to specialize with a view to research work and university teaching may either complete an honors 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 honors 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 subject 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:

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. English</td>
<td>1. Pure Mathematics</td>
</tr>
<tr>
<td>2. French</td>
<td>2. Applied Mathematics</td>
</tr>
<tr>
<td>3. German</td>
<td>3. Physics</td>
</tr>
<tr>
<td>4. Italian</td>
<td>4. Chemistry</td>
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<tr>
<td>5. Latin</td>
<td>5. Biology</td>
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<tr>
<td>7. Economics</td>
<td>7. Chemical Engineering</td>
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<tr>
<td>8. Education</td>
<td>8. Civil Engineering</td>
</tr>
<tr>
<td>10. Philosophy</td>
<td>10. Mechanical Engineering</td>
</tr>
<tr>
<td>11. Architecture</td>
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</tbody>
</table>

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.

At the beginning of each year of his residence at the Institute, each student is assigned to some member of the faculty who will act as the student's personal adviser in the selection of his studies and courses and in other matters pertaining to life at the Institute.
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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
(4-5) Two other subjects.

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

The third and fourth year honors 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.

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 honors 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 honors course. A student proposing to take an honors 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 honors students in that subject during each of the two years and in addition certain courses in allied subjects.
In 1927–28 honors courses will be available as follows:

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

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

Third year, four subjects: (1) mathematics, (2) physics 300, (3) physics 310 or 420, (4) one other subject.

Fourth year, four subjects: (1) mathematics, (2) physics 420 or 310, (3) physics 500, (4) one other subject.

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

The degree of B.A. with honors will be awarded at the end of the fourth year to students who have completed an honors course. Candidates for honors who fail may be excused such part of a general course as may be equivalent to the work they have done. Candidates for honors who are not making satisfactory progress may be required to discontinue their honors 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 87–101.
A student who has completed a general or an honors 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 89.

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-year 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-year 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 92 and 106 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

1 This regulation applies to students who entered in September, 1921, and later.
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 may also be dropped for failure to improve while on probation, 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 during the year will
not be readmitted before the beginning of the following academic year, and then only to the standing attained at the beginning of the academic year in which the student was dropped. A student dropped from the Institute at the end of the academic year for (a) failure in as much as half of the work of his schedule, or (b) failure to improve while on probation, may reenter the Institute at the beginning of the following year but without any credit for the past year except in courses in which his grade for the year is III or better. Students who have been dropped are not permitted to return unless acceptable evidence is supplied of further study or of satisfactory work in necessary employment. 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 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. To be removed from probation a student with five courses is required to secure at least two grades of III or better; one with four courses is required to secure at least three III's or two III's and no V's; one with fewer than four courses is required to secure at least three grades of III or better.

1 The symbols have the following meanings: I Very high standing, II High standing, III Medium standing, IV Low standing, V Failure.
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Probation is a period of scholastic trial, and during that period the student on probation is not permitted to represent the Institute in any capacity. Probation is terminated only at the regular examination periods.

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 [ 48 ]
than one course of the standard schedule required for full standing in those years.

SUBJECTS OF INSTRUCTION FOR 1927–28

Of the courses to be offered during the scholastic year 1927–28 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. M W F 8:00, 9:00 or 11:00 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 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. Advanced Composition. Planned for students who show marked ability in writing. Themes and conferences. M W F 8:00
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ENGLISH 340. The English Novel, with especial reference to the chief novelists of the nineteenth century.  
     M W F 12:00

     T Th S 8:00

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


ENGLISH 420. Eighteenth-century Poetry, and Nineteenth-century Literature, from the publication of the Lyrical Ballads, 1798, to Queen Victoria's accession, 1837. (Alternates with English 410.)  
     M W F 11:00

ENGLISH 430. An introductory course in Old English, followed by a careful reading of Beowulf.  (Alternates with English 440.) 
     Hours to be arranged.

ENGLISH 440. Chaucer. A close reading of the principal works, with emphasis both on linguistic and literary values.  
     (Alternates with English 430. Not offered in 1927-28.)

ENGLISH 460. American Literature. A study of the principal authors from the Colonial Period to Modern Times, with especial emphasis on the development of American culture and ideals. Enrollment limited to twenty students.
     T 2:00-5:00
Requirements for honors 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.

**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 9:00 or T Th S 10:00

**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 8:00, 12:00

**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. Practice in literary translation from the French. Extensive reading of representative texts in French.

T Th S 10:00

**French 330.** Oral French. Rapid reading of modern French texts, discussions, oral reports, phonetics. Oppor-
tunity will be offered to practice elementary teaching under the supervision of the instructor. M W F 9:00

FRENCH 410. Fourth Year French. Cours de Style. Open to students who have passed French 300 or 310 with a grade of III or better. Themes and translations into French. Analysis of style of French writers from the seventeenth century to the twentieth. French versification.

T Th S 8:00

FRENCH 420. French Classicism. Open to students who have passed French 300 or 310 with a grade of III or better. Students must also have passed French 320 with a grade of III or better or else take French 320 at the same time as French 420. Lectures, collateral readings, reports, and essays. Conducted in French. T Th S 9:00

FRENCH 430. Entirely similar in requirements, purpose and method to French 420 except that, instead of a special branch of literature, several representative writers will be studied. Hours to be arranged.

FRENCH 500. Seminar in French romanticism. Hours to be arranged.

Requirements for Honors Course in French: French 300 or 310, 320, 410, 420, and 430 passed with high credit (grades of I or II).

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

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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 12:00

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. (Alternates with German 310.) T Th S 8:00

GERMAN 310. Lectures in German on German literature in the nineteenth and twentieth centuries. Study of nineteenth and twentieth century works (including Gerhard Hauptmann). Collateral and outside reading. German syntax. Composition. The work will be carried on mainly in the German language. (Alternates with German 300. Not offered in 1927–28.)

GERMAN 400. Lectures in German on German literature from its beginnings down to Gottsched. Study of Walter von der Vogelweide's poems (or of the Nibelungenlied or Gudrunlied). 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 exclusively. (Alternates with German 410.) T Th S 9:00

GERMAN 410. Study of Goethe's Faust. Literary translation, essays, discussions, debates. The work of

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the course will be carried on in German exclusively. Prerequisite: Senior or graduate standing; three years of college German. (Alternates with German 400. Not offered in 1927–28.)

ITALIAN 300. Open to students who have had at least two years of French, Spanish or Latin. Oral exercises, grammar and composition and reading of representative Italian authors.

SPANISH 110. First Year 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.

SPANISH 200. Second Year Spanish. Oral exercises, review of grammar, composition, outside reading under the supervision of the instructor, and reports.

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.

SPANISH 310. A rapid beginning course in Spanish for Juniors and Seniors who have already taken a regular course in another Romance Language or in Latin. Oral exercises, grammar, and composition.

SPANISH 320. Survey of the History of Spanish Literature. Open to Juniors and Seniors who have taken
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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 8:00, 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. M W F 9:00


GREEK 300. Introduction to Greek Literature. Reading of Homer, Plato, and the Bible. (Not offered in 1927–28.)

MATHEMATICS 100. Elementary Analysis. Trigonometry, analytic geometry, and introduction to calculus. This course, constituting the required freshman course in mathematics, forms a general introduction to work in
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mathematics and science, pure and applied. In order to make the change from secondary school to university instruction less abrupt, the course is given in two-hour periods, three times a week, so that students may obtain individual assistance when necessary. In this way a large part of the problem work is done in class; nevertheless, this method of instruction is devised to lead the student to do his work very largely by himself.

M W F 11:00–1:00
T Th S 11:00–1:00

MATHEMATICS 0. Elementary Algebra. This course begins about January 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. Successful completion of the course is necessary in order that such a student may register again in Mathematics 100.


This course continues the work of Mathematics 100 in Calculus and Analytic Geometry. Students who have considerable facility in mathematical reasoning should take Mathematics 210.

MATHEMATICS 210. Differential and Integral Calculus. This course covers the ground of Course 200, but is more complete and goes further. It is intended for students
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who have considerable facility in mathematical reasoning. It is a sufficient introduction to Mathematics 310, and is open to students who obtain high grades in Mathematics 100 or otherwise satisfy the instructor of their fitness to take the course.

**Mathematics 300.** Advanced Calculus and Differential Equations. Differentiation and integration of functions of several variables; multiple integrals; introduction to the theory of differential equations; Fourier series. This course or Mathematics 310 should be taken by students whose major interest lies in physics or engineering; it is open to those who pass successfully in Course 200 or 210 in mathematics.

M W F 8:00

**Mathematics 310.** Advanced Calculus and Differential Equations. Applications to Mechanics and Thermodynamics. This course is intended for students with special ability in mathematics who have had Mathematics 210. Mathematics 340 is also a desirable preparation.

M W F 8:00

**Mathematics 340.** Analytic Geometry and the Nature of Space. General algebraic methods applied to geometry. This course, besides giving an introduction to higher algebra and the projective theory of conic sections, investigates the fundamental problem of the application of mathematics to space. The text books are Dickson, Elementary Theory of Equations, and Veblen and Young, Projective Geometry, vol. I.

This course should interest Sophomores, Juniors and Seniors who have special facility for mathematical reason-
ing, even if their fundamental interests are more closely connected with science or philosophy, than mathematics.

MATHMATICS 400. Theory of functions, real and complex variable. The important functions of analysis and modern general methods. Hours to be arranged.


MATHMATICS 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.

MATHMATICS 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.

MATHMATICS 530. Contemporary Mathematics. A seminar course on research being carried out by contemporary mathematicians. The work of representative mathematicians will be presented in such a way as to make there publications accessible to students. Hours to be arranged.

APPLIED MATHMATICS 200. Mechanics. A study of the fundamental principles, with applications to machines and structures. It includes elementary statics, dynamics, and hydraulics. This course is ordinarily prescribed as part of the engineering course, but students who have demonstrated special mathematical ability may take
ANNOUNCEMENTS

Mathematics 340 instead and follow it in the Junior year with Mathematics 310 instead of Mathematics 300.

T Th S 8:00

APPLIED MATHEMATICS 300. Advanced Mechanics. This course does not presuppose Applied Mathematics 200, but does assume good training in mathematics. It should be taken with or after Mathematics 310. (Not offered in 1927-28).


APPLIED MATHEMATICS 500. 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. Theoretical Economics and the Calculus of Variations. In this course the theory of maxima and minima of integrals and functionals is developed and applied to a systematic exposition of economic theory. (Not offered in 1927-28.)

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 1927-28.)

Besides these courses as listed above, to be given during the academic year 1927-28, others may be given to suit
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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 one experimental lecture, two recitations, and three hours of practical work per week on experimental dynamics, heat, sound, light, 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 two lectures and one recitation, and three hours of practical work per week on 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, Roentgen rays, the electrical properties of gases, and other modern developments. In the Lab-
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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. Twenty-five 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.

**Physics 300.** A course of three lectures and three hours of practical work per week on properties of matter, heat, theory of vibrations, sound, 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.

**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...
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and electro-magnetic waves, three electrode tubes and their applications to wireless telegraphy and telephony. Students taking this course must have completed Mathematics 200 or 210. (Not offered in 1927-28.)

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 Laboratory Th 2:00-5:00

Physics 330. Chemical Physics. Three lectures per week on thermodynamics; including chemical equilibrium and affinity, 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 in 1927-28.)

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 400. Physics Colloquium. One meeting a week at which present-day researches in physics will be discussed.


Physics 510. Kinetic theory, electricity in gases, X-rays, and radioactivity.

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PHYSICS 520. Higher dynamics, thermodynamics, and quantum theory.

PHYSICS 530. 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 Western Electric Company, the Eastman Kodak Company, the Bureau of Standards, and others. Students desiring to qualify for positions in such establishments should take the Honors 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 honors in physics. The Honors 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 10:00 Laboratory M and Th or W and F 2:00-5:00**

**CHEMISTRY 200.** A Survey Course in General Chemistry. Three lectures and three hours' laboratory work weekly. A second year course arranged primarily for students who are not specializing in chemistry. The first part of the course is devoted to a study of chemical processes associated with natural phenomena. So far as possible the evolutionary outline is followed: astrochemistry, geo-chemistry, plant and animal chemistry. The second part of the course includes a systematic study of the application of chemistry to the more important industries and arts. The aim of the laboratory work is mainly to illustrate the subject matter of the lectures, although attention is paid also to the development of laboratory technique.

Since this course does not fulfill the requirements in organic chemistry for pre-medical students, the latter will take Chemistry 300. Chemical engineers and academic students specializing in chemistry will take Chemistry 220.

**M W F 10:00 Laboratory T or F 2:00-5:00**

**CHEMISTRY 220.** Quantitative Analysis 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,
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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 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 9:00 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 9:00 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 200. M W F 8:00 Laboratory M Th 1:30–4:30

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 410A. Colloid Chemistry. A course for Chemical Engineers. Two lectures and three hours' laboratory work weekly. The course treats of the theories of colloid chemistry and their applications in biology and the arts. Prerequisite: Chemistry 310.
W F 9:00 Laboratory Th S 8:00–10:00

CHEMISTRY 410B. Colloid Chemistry. A course for Academic Students. Similar to Chemistry 410A except six hours' laboratory work weekly.
W F 9:00 Laboratory M W 2:00–5:00

CHEMISTRY 420A. Electrochemistry. A course for chemists and chemical engineers. Two lectures and three 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 S 10:00 Laboratory F 2:00–5:00
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CHEMISTRY 420B. Electrochemistry. A course for academic students. Similar to Chemistry 420A except six hours' laboratory work weekly.

T Th S 10:00 Laboratory W F 2:00–5:00

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 Th 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. Pre-requisite: 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, elecrometric 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 11:00 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.

F 12:00

**CHEMISTRY 500. Chemical Research.** Chemical engineers or students who are specializing in chemistry are
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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. Photo-chemistry and Catalysis. Two lectures weekly for one year. 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 1927–28 and every third year thereafter.

Hours to be arranged.

Chemistry 520. 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 1928–29 and every third year thereafter.

Hours to be arranged.

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.
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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 1928–29 and every third year thereafter. Hours to be arranged.

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 1929–30 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 1927–28 and every third year thereafter. 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 advance degrees given on pages 43 and 44, 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 Photochemistry and Catalysis  
Chemistry 520 The Phase Rule  
Chemistry 530 Industrial Chemistry  
Chemistry 550 Sub-Atomic Chemistry
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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 110. Same as Biology 100, but with additional laboratory work to meet the needs of pre-medical students. M W F 9:00 Laboratory W Th or F 1:30–5:30

BIOLOGY 220. The first part of the year is devoted to a study of the relation of the insects and their allies to disease, including the rôle of insects in the transmission of disease, the examination of important disease-transmitting species, and the investigation of their life histories and methods of control. Following this, the animal parasites of man—including trematodes, cestodes, nematodes, protozoa and spirochetes—are taken up, special attention being given to methods of infection and prevention of infection. The work of the last part of the year consists of a general introduction to bacteriology, with discussion of the principles of immunity and the prevention of disease by personal care and community effort. Prerequisite: Biology 100.

M W F 11:00 Laboratory W or Th 2:00 to 5:00

BIOLOGY 340. Animal Taxonomy and Ecology. A course dealing with the natural history and ecology of
ANNOUNCEMENTS

animals, with special reference to local species. A study is made of the phylogeny, classification and taxonomy of both invertebrate and vertebrate groups, and of the structural characteristics useful in identification of groups and species; local species are identified by means of tabular keys. A study is made of the life histories, habits, habitats, and inter-relations of animals, the principles of geographic distribution, the economic importance of various groups and species, methods of control of pests, and principles of conservation and propagation of economically valuable forms. The course is designed to demonstrate the natural relations of animals to their environment, to each other, and to man, and to develop an intelligent interest and appreciation of wild animal life. Prerequisite: Biology 100.

M W F 9:00 Laboratory M or T 2:00-5:00

BIOLOGY 350. General Embryology. A comparative study of the early development of animals, with special reference to the higher vertebrates. The fundamentals of comparative adult vertebrate anatomy are also introduced as a foundation for the embryological studies. The principles and important results of experimental embryology are also discussed. Prerequisite: Biology 100. (Not offered in 1927-28.)

BIOLOGY 370. General Bacteriology. Sterilization, preparation of media, and methods of cultivation; disinfection; nature and relationships of various types of microorganisms; 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
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curative medicine. Special emphasis on public health and hygienic aspects of the subject. A natural sequence to Biology 220. Open to upper-class students, and to sophomores by special permission of the instructor. Pre-requisites: Biology 100, Chemistry 100, and preferably Biology 220 also. (Not offered in 1927-28.)

BIOLOGY 420. Cellular Biology. This course is very general in scope, including a study of all the important features of cell structure and activities, such as the constitution of protoplasm; its nutrition, metabolism, and mode of motion; irritability and the properties of nerve cells; the mechanism of development; youth and old age; and the physical basis of reproduction and heredity. Recent lines of experimental work in general physiology, embryology, and cytology will receive special attention. A knowledge of physics and of theoretical and organic chemistry is necessary. Three lectures a week, assigned reading, and reports. Hours to be arranged.

BIOLOGY 510. Special work in Biology. This course will consist of advanced work in special fields of biology and will be adapted to the needs of the particular student. Hours to be arranged.

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

PSYCHOLOGY 200. Introductory Psychology. The first half-year furnishes a general introduction to the study of
the normal human mind; the nature, the problems, and the methods of a scientific psychology. The facts and laws of mental life, as indicated by experiment, are set forth, and the lectures are supplemented by classroom demonstration. This part of the course is planned to serve as a preparation for future work in the laboratory. The second half-year surveys the special fields of animal psychology, child psychology, differential psychology, the psychology of the abnormal, genetic psychology, social psychology, and psychotechnology. These topics are considered from different current psychological points of view.

T Th S 10:00

ECONOMICS 200. Elements of Economics. An introduction to the fundamental theories of economics and to their application, with special reference to the problems of money, banking, international trade, regional planning, business organization, the control of industry and the distribution of wealth. T Th S 9:00

ECONOMICS 300. Principles of Economics. This course is similar to Economics 200, with some topics treated in more detail. Open to students who have completed Business Administration 200. (Not open to students who have taken Economics 200.) T Th S 8:00

ECONOMICS 310. Economics for Engineers. An introduction to the principles of economics and their applications, with special reference to the economic problems encountered by engineers. Theoretical analysis is more mathematical, and more attention is given to cost analysis and to manufacturing and business problems than in
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ECONOMICS 400. Analysis and Interpretation of Statistics. Statistical method: collection of statistics; frequency distribution; averages; variation; index numbers; probable error; correlation; analysis of time series. The study of methods to be followed by applications to the problems of the business cycle and business forecasting, and to problems connected with the growth of population and concentration in urban areas. Open to students who have completed Economics 200. (Not offered in 1927-28.)


M W F 8:00

ECONOMICS 500. Transportation and Public Finance. In this course the student is induced to apply and test his economic theory. The first half-year is devoted to the study of such aspects of railroad transportation as: railway finance, competition, ratemaking, valuation, and regulation. Public and private interests are critically considered. In the second half-year, theory and practice in taxation are studied historically and analytically, with special reference
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to the economic burdens, effect, and desirability of various methods.  

SOCIOLGY 300. 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, History 100, and Economics 200.

BUSINESS ADMINISTRATION 200. Business Management. The promotion and organization of business enterprises and the administration of such enterprises in operation. The course considers in particular, marketing, financing, personnel management, risk-bearing, community and state relationships, accounting, and the interpretation of financial reports.


EDUCATION 300. Introduction to High-School Teaching.
This course includes the study of the psychological principles of methods of teaching with especial reference to secondary schools, of the principles of secondary education, and of methods of teaching high-school subjects.

M W F 10:00

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 has 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.

**History 110.** The History and Civilization of Ancient Greece and Rome. This course is intended as an introduction to historical methods of thinking as well as to the history of the ancient world. The political narrative will form the central theme, and considerable attention will be given to geography, to chronological sequence, and to the formation of balanced historical judgments. Social, economic and religious factors will not be neglected. Much emphasis will be placed on the more purely intellectual contributions, such as the literature, philosophy, science and political thought of Greece and the literature, law and governing ideas of Rome. T Th S 8:00

**History 120.** English History to 1485. This course will deal with the geographical, political, economic, and social
factors of the period covered, with the necessary emphasis on literary materials. Events and institutions will be considered in their relationship to Europe generally, as well as to England.

HISTORY 130. Modern European History, 1450–1789. It will be the purpose of this course to trace the history of Western Europe from the Reformation, through the period of the "religious ward," the age of Louis XIV, and the struggle for colonial supremacy, to the French Revolution.

HISTORY 210. English History from 1485. Constitutional and economic detail will supplement the political survey of this period.

HISTORY 230. Europe since 1789. This course will constitute a study of the social, political, and economic history of Europe since the French Revolution, 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.

HISTORY 300. American History. The historical development of the United States, with special reference to the period since the adoption of the Constitution.

HISTORY 310. Constitutional Government. The origins and operation of constitutional government, the formation of public policy, and the conduct of public
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business in England, France and the United States. (Alternates with Jurisprudence 300.) M W F 10:00

HISTORY 320. The Development of European Culture, 500–1500. 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. The lectures will be topical and interpretative. Among the subjects treated will be philosophy, science, history, political theory, literature, law, and art. Prerequisite: History 110; Philosophy 300 recommended. T Th S 11:00

HISTORY 430. Seminar in Diplomatic History. The investigation and discussion of selected topics in modern European diplomacy with emphasis on the situation preceding the World War. Attention will be given to methods, materials, and the general literature of the subject. A reading knowledge of German or French is essential. Open to properly qualified students after consultation with instructor. T Th S 9:00

HISTORY 440. English History. A special course on nineteenth century and present day England, with special attention to the development of the British Empire. Open to seniors and graduate students who have completed one full course in English history. M W F 11:00

HISTORY 510. American History since 1850. A seminar course for the intensive study of selected topics.
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Prerequisites: History 100, History 300, Economics 200, or their equivalents. Open to graduate students after consultation with instructor. Hours to be arranged.

History 520. Topics in Legal History and Political Theory. The investigation and interpretation of selected legal, constitutional, and political problems in ancient and mediaeval history, such as the nature and origin of the state, the patriarchal family, the "city-state," the "god-king," tyranny, sovereignty, allegiance and treason, Roman public law, Germanic customary law, and feudalism. The attempt will be made to analyze various fundamental conceptions in law and politics. Open to properly qualified students after consultation with instructor. T Th S 12:00

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. (Alternates with History 310. Not offered in 1927–28.)

Philosophy 210. Logic and Ethics. First half-year: a study of the process of thinking, the laws of inductive and deductive reasoning, and the nature of truth. Second half-year: an examination of the development of moral ideas, the essentials of the main ethical theories and the problem of morality at the present time.

M W F 9:00 or 12:00

Philosophy 300. History of Philosophy. An historical survey of the essential features and main currents
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of philosophical thought, ancient, mediæval, and modern. 

PHILOSOPHY 310. Types of Ethical Theory. A critical examination of some of the principal works of moral philosophy, and a study of the problem of moral value. (Not offered in 1927–28.)

PHILOSOPHY 320. Contemporary Philosophy. A study of European and American philosophy since Schopenhauer, dealing with the attitudes of idealism, realism, and pragmatism as exemplified in questions concerning the nature of reality, the problem of knowledge, social and political attitudes, aesthetics, and theories of morality.

PHILOSOPHY 410. Philosophy of Religion. An introduction to the historical-philosophical study of religion, dealing with the main facts in the evolution of religion and the more fundamental problems of the religious consciousness.

PHILOSOPHY 430. The Nature of Mind. An intensive study of the reflective process, thoughts, consciousness, meaning, and mind, based upon the data of psychology, anthropology, and biology as well as upon the philosophies of mind presented by classical and contemporary thinkers. (Not offered in 1927–28.)

PHILOSOPHY 440. Pessimism and the Problem of Evil. An historical study of the problem of evil in ancient and mediæval thought, followed by a critical examination of the more significant pessimistic strains in modern philosophy, theology, and literature. Particular attention is
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given to modern scepticism and theodicy, Pascal, Bayle, Leibniz, the optimism of the Enlightenment, Rousseau and the romanticists, Byron, Leóu, Leopardi, Alfred de Vigny, Schopenhauer, Hartmann, Tolstoy, and more recent philosophical pessimism, contemporary theology, and literature.

PHILANTHROPY 500. 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.

PHILANTHROPY 510. 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. It is open to qualified Seniors who wish to pursue advanced work in social science. Prerequisites: History 100, Economics 200, Sociology 300.

PHYSICAL TRAINING

The athletic Field House, completed in the Fall of 1920, with its ample locker and shower facilities, and with its gymnasium floor and modern athletic apparatus, not only
meets the needs of the university athletic teams but also furnishes ample opportunity for systematic physical training on the part of all members of the institution. A charge of two dollars per academic year is made for the use of a locker.

One period of physical training each week is required of all men of the Freshman class, and voluntary classes are formed for the benefit of all other members of the Institute. The classes are organized in such divisions as to eliminate direct competition between the physically weaker and the physically stronger among the students. The classes take up regular gymnastic work including boxing, wrestling, athletic dancing, basket-ball, indoor and outdoor base-ball, track work and the like. Appropriate emblems are awarded to students showing various degrees of efficiency. Numerous intramural games and contests are arranged between classes and other organizations to utilize the competitive spirit in the development of athletic and gymnastic proficiency. The certificate of medical examination submitted by a student on admission determines in a large measure the character of work that the individual student is permitted to take. In certain cases special physical examinations by the Medical Adviser to the Committee on Outdoor Sports will be required, for which a fee will be charged. Lectures are given on personal hygiene and the principles of health.

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 a bachelor's degree, and after successfully completing the remaining year of his course he is awarded an engineering 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 honors 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 honors 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-year course leading to a bachelor's degree in four years and an engineering degree in five years:
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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) Applied Mathematics 200
(3) Physics 200
(4) French or Spanish
(5) Engineering 210

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

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 310
(7) Seminar (Engineering 400)

ELECTRICAL ENGINEERING
(1) Alternating Currents (E.E. 400)
(2) Electrical Engineering Laboratory (E.E. 410)
(3) Electrical Design (E.E. 420)
(4) Industrial Management (M.E. 430) or an approved Elective
(5) Economics 310
(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
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(5) Economics 310
(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 (M.E. 520, or an advanced C.E., E.E., or science course)

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)
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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.

Section 1
W and F 11:00 and 2:00–5:00

Section 2
T and Th 11:00 M and T 2:00–5:00


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

M W F 12:00 W Th 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.

**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.

**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. Prequisites: Physics and Chemistry 100, Mathematics 200 or 210. Laboratory fortnightly.

**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: W Th 1:30–3:30 F 1:30–4:30
Shop Section B: T Th 10:00–12:00 S 9:00–12:00

**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.

W Th 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. M W F 8:00

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

MECHANICAL ENGINEERING 500. Advanced Machine Design. The investigation of elaborate complete machines; 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, etc., not covered thoroughly in other courses. Details of design and operation of special power and heating plants. Prerequisite: Mechanical Engineering 420.
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Mechanical Engineering 520. Advanced Heat Engines. The design and operation of heating, ventilating, and refrigerating equipment and plants; design of standard types of steam turbines, engines, and boilers. Elective.

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. Alternating Currents. A mathematical treatment of the theory of alternating current phenomena, using Steinmetz's symbolic method. The various types of alternating current generators and motors; their characteristics and operation. Transformers. Synchronous converters. Prerequisite: Electrical Engineering 300. M W F 11:00

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
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ELECTRICAL ENGINEERING 420. Electrical Design. Design of machinery for direct and alternating current. Calculation of characteristics. Prerequisite: Electrical Engineering 300. T Th S 10:00

ELECTRICAL ENGINEERING 500. A continuation of Electrical Engineering 400. Advanced alternating currents. Transients. Attention will be given to special branches such as high voltage installations, high frequency, illumination, telephony, wireless telegraphy, etc. Three lectures and one laboratory period per week.

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, cement, and concrete are made in the laboratory. Hydraulics: a course devoted to the principles of hydrostatic and hydro-dynamic 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
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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 curves. Computation of earth work. Prerequisite: Engineering 210. T Th 12:00 W F 10:00-1:00


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
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M W F 9:00 M W 10:00-1:00

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 [ 100 ]
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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-year 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 Spanish¹
(4) A Science
(5) Architecture 200: consisting of
    (a) Design
    (b) Freehand
    (c) History of Architecture

¹Students in second year shall continue the language chosen in first year course.
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Third Year

(1) English
(2) Applied Mathematics 200
(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: consisting of
   (a) Construction
(5) Architecture 440: consisting of
   (a) Historic Ornament
   (b) Water-Color

Fifth Year

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

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 VIII

(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 12:30–5:30

(b) Freehand. Drawing in charcoal from simple casts of classical ornament. Four hours a week. T S 8:00–10:00

(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 1:30–2:30 II

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 II

ARCHITECTURE 310.

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

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 II

ARCHITECTURE 410.

(a) History of Architecture. Two lectures a week on the History of Modern Architecture.

M F 1:30-2:30 VIII

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

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 VIII

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.
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Included in the work of design of the second, third, and fourth years with a special study of the theory of design.

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 postgraduate 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
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resumed under some modifications of the original plan as to time and place.

ENDOWED PUBLIC LECTURESHIPS

Three endowed 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
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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, and by Sir Henry Hadow, Vice Chancellor of the University of Sheffield.

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 thirteenth 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 to 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

Quarters for the Library of the Institute have been provided in the Administration Building. The Affairs of the Library are administered by a committee of the Faculty and Miss Alice C. Dean, M.A., as 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
THE RICE INSTITUTE

Faculty and advanced students. In this manner a high degree of efficiency becomes possible at the very beginning of the Library's existence. Moreover, for work of general and more popular interest the shelves of the Houston Public Library are accessible to all members of the Institute.

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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, two class rooms, two dark rooms, a library, 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 60 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, and a fully equipped 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 forty resistance boxes of all kinds are also provided, and numerous galvanometers, electrometers, and electrosopes of various types. High potential batteries and generators are available for research work. A large Weiss electromagnet, 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. For work in heat, electrical furnaces, various types of radiation pyrometers, resistance thermometers, and standard thermocouples are available. 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 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 will be an abundance of natural light, while an elaborate system of artificial ventilation promises to remove 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, electro-, and industrial chemistry. 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. The undergraduate courses are cultural in their aim. Laboratory work is given in all; microscopes of the most modern type are provided for the students. The department is 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 department of architecture is located on the second floor of the chemistry laboratory, and is equipped with
THE RICE INSTITUTE

large general drafting rooms modern in all their appoin-
tments, 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 architec-
tural 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 inde-
pendently. Special equipment includes blue printing
machines, universal drafting machines, parallel attach-
ments, folding and rolling parallel rules, ellipsographs,
beam compasses, section liners, and an elaborate set of
Olivier models including the war mast, hyperbolic para-
boloid, elliptical, and conchoidal hyperboloid, conoid,
groined, and cloistered arch, intersecting cylinders, racc-
cording 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, 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, calculating machines. The Materials Testing laboratory of this department is equipped with one 50,000 pound Riehle 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; 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 wiers; 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 electrical engineering laboratory is on the first floor of the engineering building. The laboratory power supply, arranged to be independent of the general Institute lighting and power system by running from a separate generator in the power house, is 220 and 110 volts, 3 phase, 60 cycles. From a central switchboard, the distribution of power is accomplished by open overhead
busses to small switchboards conveniently located about the laboratory. The circuit breakers on these distribution boards are of varied make, representing the practice of the chief manufacturers of this class of apparatus. The laboratory equipment is ample for a thorough study of both direct and alternating current circuits and machinery. Direct current for laboratory use is obtained from a General Electric three wire generator, of 35 kilowatts capacity, 125 and 250 volts, driven from the alternating current source by a direct connected induction motor. The direct current equipment includes a 50 kilowatt 250 volt General Electric generator; two similar 5 kilowatt 125 volt Western Electric generators with commutating poles, either flat or over-compounded, for parallel operation; a 5 kilowatt 110 volt Commercial shunt generator; a $3\frac{1}{2}$ kilowatt 125 volt Westinghouse flat compounded generator; a 1 kilowatt 500 volt Commercial generator; a $4\frac{1}{2}$ kilowatt Westinghouse generator with interpoles flat compounded for 125 volts; a 5 kilowatt 110 volt Commercial shunt generator; a 5 horse-power 500 volt Crocker-Wheeler generator; and a 6 volt General Electric generator with Tirrill voltage regulator capable of delivering 500 amperes, driven by a direct connected induction motor; a $1\frac{1}{2}$ kilowatt generator, 2000/1200/800 volts, of the Electric Manufacturing Company, driven by a direct connected induction motor; a Holtzer-Cabot set consisting of three direct connected machines, 90/150 volts direct current, 20/25 volts direct current, 90/110 volts alternating current, three phase, 170/250 cycles; a $7\frac{1}{2}$ horse-power Western Electric motor and a 2 horse-power Roth motor, both shunt wound for 220 volts; a 3 horse-
power 230 volt General Electric variable speed shunt motor with commutating poles; a 10 horse-power Robbins and Myers motor, and two similar 13 horse-power Crocker-Wheeler motors, all three shunt wound for 230 volts; and a 4 horse-power 220 volt Sprague series motor. The equipment of alternating current machinery includes: two similar $7\frac{1}{2}$ kilowatt 220 volt General Electric 1-2-3-6 phase synchronous generators which may be direct connected as a frequency-changer set, or, by means of shifting stators, as a phase-displacement set, or used without mechanical connection for parallel and other operation; a 5 kilowatt 220 volt General Electric 3 phase synchronous generator with distributed field (round rotor); a $7\frac{1}{2}$ horse-power 220 volt Fairbanks-Morse 3 phase squirrel cage induction motor; a 5 horse-power 220 volt Westinghouse 3 phase slip-ring induction motor; a 10 horse-power 220 volt General Electric 3 phase induction motor with internal starting resistance; a $7\frac{1}{2}$ horse-power 220 volt Wagner unity power factor single-phase motor. Among the rather special alternating current machines may be mentioned, a dynamotor which when operating from a 110 volt direct current supply line is capable of delivering up to 18 amperes at 110 volts at a frequency of 500 cycles; an 8 kilowatt 110 volt General Electric 2-3-6 phase synchronous converter of the split or regulating pole type which may be driven by the direct current winding or by belt from an external source; a set consisting of two direct connected Lincoln induction motors, one 10 horse-power, 1200 r.p.m., wound rotor, the other 5/10 horse-power, 600/1200 r. p. m., squirrel cage, for cascade operation at several speeds; and a 10 kilovolt-ampere General Electric
220 volt 3 phase induction regulator for raising or lowering voltage 100%. Other equipment includes: three 2 kilovolt-ampere Kuhlman 110/220: 110/220 volt transformers; three 5 kilovolt-ampere General Electric transformers with taps for Scott and other connections; six 3 kilovolt-ampere Western Electric 110/220: 110/220 volt transformers, reactances, both air and iron core; condensers; rheostats; and starting devices. Loads for testing purposes may be obtained by lamp banks, rheostats, or by three large iron water-boxes. The supply of meters consists of 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, synchronoscope. For checking and calibrating these instruments, there is a complete assortment of precision instruments, including a potentiometer and laboratory standards. An oscillograph is completely equipped for taking and developing both rectangular and circular records. Through a gift of the late Mr. Howard E. Hughes, of Houston, Texas, to the Institute, the electrical engineering department has a completely equipped radio communicating set. The gift of this apparatus promptly stimulated the organization, on the initiative of students of this department, of an inter-collegiate radio association for the dissemination of news among the several colleges of this section. To the original set numerous additions have been made, the most recent of which is a 200-watt radio telephone and telegraph set.

The mechanical engineering laboratory equipment falls into six general classes: steam, internal combustion, hydraulic, air, refrigeration, fuel and lubricants testing.
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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, and a 7×10 horizontal slide-valve engine, both 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 kerosene or gasoline as fuel; a 3 horse-power Mietz and Weiss two-stroke cycle unit; a 3 horse-power gasoline engine; a 100 horse-power Hall-Scott aeroplane engine; 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 dynamo-meter 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 $4 \times 6$ triplex pump, both driven by variable speed D. C. motor; an Evinrude centrifugal pump direct-connected to a gasoline engine; a steam turbine 200 g.p.m. centrifugal boiler-feed pump; a calibrated overhead tank; a concrete storage cistern; four Venturi meters; a single tube manometer; a steam pulsometer; a hydraulic ram; two weir boxes and notches; a Pelton-Doble water wheel with plate glass sides; 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 flashpoint tester; 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 electric and gas furnaces, pyrometers of electric, expansion, optical, and gas pressure types, scleroscope, and Brinnel ball machine. A metallurgical microscope with specimen grinders, camera, and the usual accessories is also available.
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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, anemometer, injectors, dead weight pressure gauge tester, 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.
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with compound head, and a $22 \times 22 \times 8$ foot Gray planer. All kinds of plane surfaces can also be cut upon two Kemp-smith 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 Sharp motor-driven universal grinder, and a Greenfield cutter grinder serve as practical examples of high-class precision machine tools. A graphical wattmeter 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 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, and eight complete oxyacetylene welding outfits 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

In the residential halls for men, students and instructors are already living in a common society, a common life
under conditions the most democratic. They sit at a common table; they lounge in common club-rooms; they frequent the same cloisters; in games they meet again upon the same playing fields. The halls are governed by a student Hall Committee, under the general supervision of the Dean.

From the very opening days of the new institution the students of the Rice Institute, irrevocably committed to canons of clean sport, have participated in the several forms of intercollegiate athletic contests. The first society of students to be organized at the new University was the Young Men's Christian Association. This step on the part of the young men was speedily followed by a similar step 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 new University, has been 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" and 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 the leading public issues as they arise before Congress. Under the auspices of the first societies mentioned was formed the first of the
undergraduate periodical publications, namely, "The Thresher", which appeared fortnightly from its initial number in January, 1916, to June, 1918, since which time it has been published weekly. 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. 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 Students' Council is also President of the Association.

The extra-curriculum academic and athletic activities of the Rice students have been stimulated by several prizes donated by friends of the Institute; namely, the Lechenger silver cup, the gift of Mr. L. Lechenger, for the winning debating team in the annual commencement contest of the literary societies; the Shotwell and Harris gold medal, the gift of Messrs. W. I. Shotwell and I. Harris, for the winner of the annual oratorical contest of
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the literary societies; the Wilson silver cup, the gift of Mrs. H. A. Wilson, for the winning team of the annual class debate of the young women's literary society; the Kalb basketball memorial silver cup, the gift of Mr. E. F. Kalb; and the Sweeney silver cup, the gift of the J. J. Sweeney Company, to be contested for annually in class track athletics. Mr. William M. Rice, Jr., has provided a cabinet for the preservation and exhibition of these and similar gifts and trophies of Rice 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 center. All the opportunities of this establishment 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 has been 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 building is now in process of construction in materials and architecture conforming with the first of the Rice quadrangles, and is designed to afford to the Faculty the
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advantages of a clubhouse on the campus. It is hoped that the Robert and Agnes Cohen House will be completed in time for dedication at the next annual homecoming of the Rice Alumni on Thanksgiving Day of this year.
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DEGREES IN COURSE CONFERRED
JUNE 6, 1926

At the eleventh annual commencement convocation of the Rice Institute held at the conclusion of the thirteenth academic session the baccalaureate sermon was preached by Rabbi Henry Barnston, Ph.D., of Congregation Beth Israel, Houston, Texas, and the commencement address was delivered by Dean Joseph Sweetman Ames, Ph.D., LL.D., of the Johns Hopkins University. On recommendation of the Faculty and by authority of the Trustees, the President of the Rice Institute, at the final ceremonies in the Academic Court on the morning of June 6, 1926, conferred the following degrees respectively:

BACHELOR OF ARTS

Calvin Alpha
Sumter Smith Arnin
Dorothy Virginia Ayres
Clara Julia Becker
Fred Fox Benton
Lyman Curtis Blair
Ernest Eugene Blondeau
Clara Gladys Bobb

Ruth Marjorie Bobb
Margaret Harrison Boyd
Mary Elizabeth Bulbrook—
with distinction
Clyde Ferguson Bull
Jean Le Noir Byers—with
distinction
Calvin Alsworth Calhoun
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Travis Houston Calvin
Hazel Bell Cannan
Myron Hendrix Canon
Louian Clarkson Carter
Bertie Mary Chambers—
   with distinction
Charles Dighton Clark
Corinne Muldrow Clarke
Della Margaret Cooper
Gerald Roy Cornelius
Robert Herbert Cottingham
Grant Cowles
Joseph Howard Creekmore
Margaret Elizabeth Crofton
Harry Shirley DaCamara
William Roland Davenport
Murray Hendrix Davis, Jr.
Nelda Mae Davis
Faunie Bess Emery
William Maurice Ewing—
   with Honours in Mathematics and Physics
Aldeane Bostick Exline
Geraldine Marguerite Fitzgerald—
   with distinction
Donald Barnard Flint
Mary Louise Ford—
   with Honours in English
Ida Freeman
Willie Mae Garrison
Jack Glenn

Emmette Knapp Goodrich, Jr
Virginia Lee Greer—with
   Honours in English
Jack Carnahan Griffin—with
   distinction
DeWitt Herman Grossman
Lottie Elizabeth Hall
Kathryn Dorothea Hamilton
Beatrice Yvonne Harrison
Leonora Sherrill Hawkins
William Cecil Heflin
Joseph Giraud Heyck
Deborah May Hickey—with
   Honours in Mathematics
Ruth Mary Hickey
Martha Frances Hill
Ray Hauton Hillyer
Wesley Herbert Hitson
Mose Dean Hodges
John Metcalf Hopkins, Jr.
Marjorie Evelyn Ilfrey
Mercer Thomas Ingram
Aileen Del Ivy
Kathryn Jantzen
James Kenneth Jones
Theodore William Kalb
Edward Arthur Kelly
Ione Marion Kidder
Charles William Lane, Jr.
Virgil Ottis Lawrence
Irma Hilldreth Lee
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Margaret Montgomery Lester
Rosalie Levinson
Herman Jeffery Lichter
Marie Louise Logan
Margaret Lyttleton
Ethel Farrington McConell
Helen Louise McCullough
Meredith Vernon McDougal
— with distinction
Mildred Lucille McGregor
Laurence Stancel McWhorter
Lillis Anita Maddux
Mira Donna May—with distinction
Lillian Merritt
Dorothy Jean Metzler
Alice Woodson Michaux
Herman Hughes Miller
Robert Floyd Miller
Thomas Verner Moore
Mary Elizabeth Northrup
Esther Myrtle Oberholtzer
Joe Gabriel Pasternack—with Honours in Biology and Chemistry
Eloise Dale Patterson
Eva Temple Prather
Herman Walter Pye
Walter Frank Qualtrough
John Lee Quillen (as of the Class of 1925)

Freda Radoff
Roy Richard Ramsey
King Rhodes Ransom
George Holmes Richter
Wentworth Arnold Riemann
James Bradley Robinett, Jr.
Edith Harlan Robinson
Adele Roensch
Edward Burns Roensch
James Ashley Russell, Jr.
Madeline Salter
Harry Allen Sander
Margaret Isabel Sanders
Moses Schwartz
Martha Campbell Scott
Dorothy Ethel Seamen
Jo Edward Shaw
Fred Vernon Shelton
Irene Punkin Simpson
Fleda Ray Smith
Flossie May Smith
Harvey William Smith (as of the Class of 1925)
Michael Spampinato
Emory Maurice Spencer
Thomas Clay Spencer, Jr.
Flora McIver Streetman—with honours in Philosophy
Theodore Baytop Stubbs
Hazel Edith Tanner
Tany Thompson
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Mary Jane Trammell
Camille Ulrich
Maurine Florence Waddell
Alwyn Pye Waller
Frances Allene Waller
Cecil Jewel Watson
Mary Katherine Wright

BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING
Nolan James Clark
Franklyn Kenneth Davis— with distinction
Thomas Edward Ellis

William Francis Ellis—with distinction
Will Powars Hoencke
Jacob William Metzler, Jr.— with distinction

BACHELOR OF SCIENCE IN CIVIL ENGINEERING
James Robert Ayers—with distinction
Everard Hobson Brown
Richard Hunt Earl
William Max Schwedler

William Gibson Harding
Carl Edward Helmle—with distinction
Frank Hamilton Payne

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING
Martin Henry Lyle Cashion
Samuel Darwin Ellis, Jr.
Lewis Edgar Garfield
James Monroe Hartsfield, Jr.
Fred Gassie Hollins—with distinction

John Snell Robertson
Innis Burford Sigler
Logan Carpenter Waterman
Roy Limuel Webb

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
Leopoldo John Castellanos
Clarence Graebe Krause

William Branton Rawson
Fred Jacob Stancliff

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MASTER OF SCIENCE
Julius Lyman Edward Erickson

MASTER OF ARTS
Joseph Stephen Gallegly Jr. Allan Henry Stevenson
Frank Willis Plunkett

DOCTOR OF PHILOSOPHY
Charles Frederick Roos

SCHOLARSHIPS AWARDED FOR 1926–27
THE GRAHAM BAKER STUDENT
Kristine Carmen Mortenson, Class 1927, of Houston, Texas

THE HOHENTHAL SCHOLARS
(Alphabetical)
Vaughn Shaffer Albertson, Class 1928, of Dallas, Texas
Eugene Henry Banta, Class 1927, of Electra, Texas
William Bridgewater, Class 1928, of Houston, Texas
Dorothy Estill, Class 1927, of Wharton, Texas
Richard Wilson Keeling, Class of 1929, of Houston, Texas
John Temple Maginnis, Class 1927, of Houston, Texas

THE SHARP SCHOLARS IN CIVICS AND PHILANTHROPY
(Alphabetical)
Norma Ruth Greenhill, B.A. (Rice) 1921, of Houston, Texas
Beatrice Yvonne Harrison, B.A. (Rice) 1926, of Houston, Texas
Donald Vines Henderson, B.A. (Rice) 1925, of Onalaska, Texas
Oscie Alice Sanders, B.A. (Rice) 1920, of Houston, Texas

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THE SCHOLAR OF THE JOHN McKNITT ALEXANDER CHAPTER,
DAUGHTERS OF THE AMERICAN REVOLUTION
Anita Del Stewart, Class 1929, of Houston, Texas

THE ELLEN AXSON WILSON SCHOLAR
Edith Evelyn McKean, Class 1927, of Mykawa, Texas

THE ELIZABETH BALDWIN LITERARY SOCIETY SCHOLARSHIP
Lyle Leroy Payne, Class 1929, of Louise, Texas

THE PALLAS ATHENA LITERARY SOCIETY SCHOLARSHIP
Irene Esther Schuppan, Class 1929, of Houston, Texas

THE ASSOCIATION OF RICE ALUMNI SCHOLARSHIP
Walter Parker Moore, Class 1927, of Houston, Texas

ANNUAL SCHOLARSHIPS
Benjamin Goodwin Chitwood, Class 1928, of Lubbock, Texas
Herbert Stevenson McConnell, Class 1927, of Tampico, Mexico
Elbert Jefferson Myers, Class 1927, of Mansfield, Texas

THE LADY GEDDES PRIZE IN WRITING
The Lady Geddes Prize in Writing was awarded to Richard Thompson Wilbanks, Class 1927, of Houston, Texas, for an essay entitled: British Interest in the Republic of Texas, 1840–1846.
LIST OF STUDENTS
1926-27
LIST OF STUDENTS

GRADUATE STUDENTS

Arrants, Edward Bowers . . . Houston, Texas
   B.A., Rice, 1925
Bishkin, Sam Leon . . . . Houston, Texas
   B.S., Rice, 1924
Blondeau, Ernest Eugene* . Houston, Texas
   B.A., Rice, 1926
Campbell, James Ira. . . . Houston, Texas
   B.A., Rice, 1924
Carothers, Mary Towell . . Houston, Texas
   Bachelor of Literature, University of Texas, 1901
Carson, Morgan Steele*. . . Texarkana, Texas
   B.A., Rice, 1924
Cohen, Ike. . . . . . . . . Houston, Texas
   B.A., Rice, 1925
Cooper, Della Margaret. . . Houston, Texas
   B.A., Rice 1926
Durham, Edward Josephi . Portland, Oregon
   B.A., Reed College, 1924
Edmonson, Nat, Jr. . . . Sherman, Texas
   B.A., Austin College, 1924
Ewing, William Maurice*. . Lockney, Texas
   B.A., Rice, 1926
Freeman, Ida . . . . . . . Houston, Texas
   B.A., Rice, 1926

* Candidacy for advanced degree approved.

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THE RICE INSTITUTE

Gergen, John Jay . . . . Minneapolis, Minnesota
B.A., University of Minnesota, 1925
M.A., University of Minnesota, 1926
Greenhill, Norma Ruth* . . . Houston, Texas
B.A., Rice, 1921
Hall, Lottie Elizabeth . . . Houston, Texas
B.A., Rice, 1926
Harrison, Beatrice . . . . Houston, Texas
B.A., Rice, 1926
Henderson, Donald Vines . Beaumont, Texas
B.A., Rice, 1925
Henderson, Joseph Calvin* . Beaumont, Texas
B.A., Rice, 1924
Hickey, Deborah May* . Houston, Texas
B.A., Rice 1926
Hightower, Jack Votaw . . Beaumont, Texas
B.S., University of Texas, 1925
Ingram, Mercer . . . . . Mart, Texas
B.A., Rice 1926
Johnson, Clarence Alfred . . El Campo, Texas
B.A., Rice, 1925
Kingsland, Aline . . . . Houston, Texas
B.A., Rice, 1923
Kirner, Juvanta Harper . . Houston, Texas
B.A., Wellesley, 1924
Locher, Gordon Lee* . . . Parkville, Missouri
B.A., Park College, 1925
Lyttleton, Margaret . . . Houston, Texas
B.A., Rice, 1926

*Candidacy for advanced degree approved.

[ 142 ]
McCullough, Helen Louise*  .  *Houston, Texas
B.A., Rice, 1926

McDougal, Meredith Vernon*  *Houston, Texas
B.A., Rice, 1926

Metzler, Jacob William, Jr.*  .  Houston, Texas
B.S., Rice, 1926

Moore, Thomas Verner  .  .  Temple, Texas
B.A., Rice, 1926

Nelson, Rudolph Stokes  .  .  Rockford, Illinois
B.S., University of Illinois, 1920
M.S., University of Illinois, 1921

Phillips, Rolland Winfield  .  .  Houston, Texas
B.S., Rice, 1925

Radcliffe, Robert Stanley*  .  Doylestown, Pennsylvania
B.S., Lafayette, 1923

Ransom, King Rhodes  .  .  Port Arthur, Texas
B.A., Rice 1926

Rather, Mary Stokes  .  .  Houston, Texas
B.A., University of Texas, 1922

Richter, George Holmes*  .  .  Dallas, Texas
B.A., Rice, 1926

Schwartz, Richard Louis  .  .  Houston, Texas
B.A., University of Texas, 1924

Schacklett, John Wilson  .  .  Houston, Texas
B.A., Rice 1922
B.S., Rice, 1923

Watson, Cecil Jewel  .  .  .  Houston, Texas
B.S., Rice, 1926

Winston, Oliver Cooper  .  .  Smithville, Texas
B.A., Rice, 1926

*Candidacy for advanced degree approved.
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SENIORS*

Abercrombie, Lovett Anderson  Houston, Texas
Alexander, Elenora Cecilia  Houston, Texas
Alexander, Joe Barkley  Pine Bluff, Arkansas
Andrew, Victor Barringer, Jr.  Houston, Texas
Archer, Eleanor Miller  Houston, Texas
Arrington, Whitfield  Houston, Texas
Austin, Edward Herbert  San Antonio, Texas
Babcock, Darrow Sublett  Houston, Texas
Banta, Henry Eugene  Electra, Texas
Barber, Philip Ernest, Jr.  Dallas, Texas
Barbour, Friedarica Ellen  Houston, Texas
Baines, Alberta Mae  Houston, Texas
Barker, Bernice  Houston, Texas
Barrick, Madge Deering  Houston, Texas
Bates, Maurine Marie  El Campo, Texas
Bellows, Benjamin Frederick  San Antonio, Texas
Bennett, Samuel Henry  Arlington, Texas
Bennett, William Foster  Arlington, Texas
Black, William Franklin  San Antonio, Texas
Bobbitt, James Ficklin  Hillsboro, Texas
Booth, Courtney Adine  Houston, Texas
Boswell, James Leo  Houston, Texas
Branard, James House, Jr.  Houston, Texas
Brewer, Benjamin Eddins  Kenedy, Texas
Bridgwater, John Chambers, Jr.  Houston, Texas
Brison, William  Houston, Texas
Britton, Mary Louise  Houston, Texas
Broussard, Lloyd Joseph  Lafayette, Louisiana
Butcher, John Henry  Dallas, Texas

*As classified October 1st, 1926.

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ANNOUNCEMENTS

Byrnes, Forrest Edward . . . Houston, Texas
Carlisle, Natalie Alston . . . Houston, Texas
Chairez, Francisco Puente . . . Houston, Texas
Chapman, Thomas Shelby . . . McAlester, Oklahoma
Clapp, James Alston, Jr. . . . Houston, Texas
Clark, Hollis Windman . . . Houston, Texas
Cocke, Myrtle Inez . . . Liberty, Texas
Cook, Sallie Mildred . . . Houston, Texas
Cooke, Edward Fenton, Jr. . . . Houston, Texas
Copeland, Bernice . . . Houston, Texas
Copeland, William Glen . . . DeQuincy, Louisiana
Cox, John William . . . Washington, D. C.
Cox, Zelda Onesia . . . Houston, Texas
Crain, Wilbert Oscar . . . Houston, Texas
Daniels, William Edwin, Jr. . . . Houston, Texas
Davidson, Irene Brewster . . . Houston, Texas
Davis, James Lawrence . . . Houston, Texas
Davis, Winnie Eileen . . . Taylor, Texas
Dixon, Thomas Kenney, Jr. . . . Houston, Texas
Dodson, James Walker . . . Texarkana, Texas
Dryden, Pearl Hooker . . . Houston, Texas
Duhig, William Gordon . . . Lake Charles, Louisiana
Ellis, Lacoste George. . . Houston, Texas
Embry, Mary Louise. . . Houston, Texas
Estill, Dorothy . . . Wharton, Texas
Feather, William Russell . . . Houston, Texas
Fitch, Mary Louise . . . Houston, Texas
Fraley, Etheldra DeLoach . . . New Orleans, Louisiana
Frazee, Lawrence Hiles. . . Rock Island, Texas
Fondren, Susie Ella . . . Houston, Texas
Fox, Edward William . . . Houston, Texas
THE RICE INSTITUTE

Fulton, Mildred King . . . . Houston, Texas
Fuqua, Claude Taylor, Jr. . . Houston, Texas
Gallaher, Tom Moore . . . Marlin, Texas
Gard, Edith E. . . . Houston, Texas
Garrison, Ranald MacDonald . Corpus Christi, Texas
Godsey, Frank Waldman, Jr. . Beaumont, Texas
Goeppinger, Dora Elizabeth . Columbus, Texas
Goldofsky, Rachel . . . Houston, Texas
Gomperts, Elizabeth Dana . Houston, Texas
Goodwin, Hazel . . . Houston, Texas
Gordon, Frank Edmond . . . Houston, Texas
Green, Hazel Catherine . Houston, Texas
Greenwood, James, Jr. . . Houston, Texas
Harbeck, Catherine Caroline . Dayton, Texas
Harbeck, Clara Malinda . . . Dayton, Texas
Henderson, John Blythe Halton . Galveston, Texas
Hertzberg, Edward Theodore . San Antonio, Texas
Hickey, Thomas Earl . . Houston, Texas
Hillyer, Bernice Ellen . . Houston, Texas
Hochuli, Paul Louis . . Houston, Texas
Hoffman, Henry S. . . Houston, Texas
Holden, Brian . . . Mexico City, Mexico
Hooton, Claude Edgar . . Houston, Texas
Hunter, James H. . . Waxahachie, Texas
Hutson, Emily . . Houston, Texas
Jackson, Susie . . Houston, Texas
Jahn, Theodore Louis . . Houston, Texas
Jarrett, Joe Sherrill . . Houston, Texas
Johnson, Mabel Florence . . Houston, Texas
Johnson, Thomas Joseph . . Dallas, Texas
Jones, Celeste Bedell . . Houston, Texas

[ 146 ]
ANNOUNCEMENTS

Joseph, Walter Banard . . . . Houston, Texas
Kaplan, Isaac . . . . . Houston, Texas
Kelly, Gertrude Elizabeth . League City, Texas
Kelly, Mildred May . . . Houston, Texas
Kendall, William Bowdoin . Dallas, Texas
Kimbell, Margaret Leslie . Houston, Texas
Kinard, Virginia Louise . Houston, Texas
King, Arthur George . Gatesville, Texas
King, Kathryn M. . . . Houston, Texas
Kirschke, John Alvin . Houston, Texas
Koch, Anna Helen . Houston, Texas
Kreamer, Karl K. . . . Lake Charles, Louisiana
Lane, Leroy Eliphalet . Houston, Texas
Lillard, Eugene Patterson . Kaufman, Texas
Little, William Edward . Corpus Christi, Texas
Lockwood, Mason Groves . Teoga, Texas
Luckie, Jo Horace . . . Houston, Texas
Lurie, Elizabeth . . . Houston, Texas
McGilvray, Lois Ella . Houston, Texas
McGinty, Milton Bowles . Houston, Texas
McKamey, Glenn Ethelbert . Port Lavaca, Texas
McKeen, Edith Evelyn . Houston, Texas
Madden, Jesse Albert . Dallas, Texas
Maginnis, John Temple . Houston, Texas
Maniscalco, Anthony Joseph . Houston, Texas
Meyer, Louis Henry . Houston, Texas
Meynier, Maurice Joseph Jr. . Houston, Texas
Miller, C. Franklin . . . Gainesville, Texas
Moore, Harvin Cooper . Houston, Texas
Moore, Walter Parker . Houston, Texas
Morgan, Virginia Livingston . Houston, Texas

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THE RICE INSTITUTE

Morgan, William Byron . . . Houston, Texas
Morris, Richard Reynolds . . Portland, Oregon
Mortensen, Kristine Carmen . Houston, Texas
Mortimer, Harold Edward . . Smithville, Texas
Morton, Martha Davis . . . Houston, Texas
Myers, Elbert Jefferson . . . Mansfield, Texas
Mynatt, Eron Pauline . . . Houston, Texas
Neyhaus, Max Warner . . . Houston, Texas
Newton, Ewing Jessup . . . Houston, Texas
O'Brien, Thomas John . . . Houston, Texas
Oliver, Henry . . . . . Houston, Texas
Perry, Mattie Lou . . . Houston, Texas
Perry, Paul Gordon . . . Dallas, Texas
Polk, Ruth . . . . . Houston, Texas
Pomerantz, Rosa Helen . . Houston, Texas
Powars, Florence May . . Houston, Texas
Powars, Mary Augusta . . Houston, Texas
Pye, Hortense Selene . . . Houston, Texas
Rechel, Ernest Robert . . . San Antonio, Texas
Redwine, Harry Page . . . El Campo, Texas
Reynolds, Frank Fisher . . Houston, Texas
Rhodes, Gene May . . . . Houston, Texas
Robertson, Andrew Sug . . Slaton, Texas
Sauer, Albert Christian . . Houston, Texas
Scharnberg, Leola Arabella . Houston, Texas
Seeger, Carolyn . . . . . Houston, Texas
Sell, Ruth Belle . . . . . Houston, Texas
Shapiro, Julian Lee . . . Houston, Texas
Shaw, Zue Belle . . . . . Houston, Texas
Sloan, Clarence Herbert . . Houston, Texas
Smiley, William Gilmore Jr. . Houston, Texas

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ANNOUNCEMENTS

Smith, Annie Jo  . . . . .  Houston, Texas
Smith, Homer Alvin  . . . . .  Houston, Texas
Smith, Will Rivers  . . . . .  Houston, Texas
Stevenson, Mary Lynn  . . . . .  Houston, Texas
Stones, Frank Wannall  . . . . .  Houston, Texas
Street, Mary Virginia  . . . . .  Houston, Texas
Stuart, Russell Edward  . . . . .  Houston, Texas
Sutton, John Wise  . . . . .  Houston, Texas
Thomas, Shirley Cowen  . . . . .  Houston, Texas
Thompson, Katherine Otilla  .  Houston, Texas
Thompson, Margaret  . . . . .  El Campo, Texas
Titterington, George Alfred  .  Dallas, Texas
Turrentine, Robert Emmett, Jr.  .  Houston, Texas
Underwood, Wash  . . . . .  Honey Grove, Texas
Wallis, Robert Clinton, Jr.  .  Denison, Texas
Ward, Irene Alice  . . . . .  Houston, Texas
Werlin, Eugene  . . . . .  Houston, Texas
White, Addlean Estella  . . . . .  Ennis, Texas
Whiteley, Rachel Sabra  . . . . .  Hillsboro, Texas
Wilbanks, Richard Thompson  .  Houston, Texas
Woods, Henry Barnes  . . . . .  Pembroke, Maine
Yeatts, Ernest Bailey  . . . . .  Abilene, Texas
Zax, Emile  . . . . .  Houston, Texas

JUNIORS*

Adams, Gayle Scott  . . . . .  Houston, Texas
Adams, Keeling Henry  . . . . .  Rusk, Texas
Albertson, Vaughn Shaffer  .  Dallas, Texas
Allen, Frank Rorrence  . . . . .  Brenham, Texas
Anderson, Martha Josephine  .  Houston, Texas

*As classified October 1st, 1926.
THE RICE INSTITUTE

Armstrong, Baker White . . . Houston, Texas
Avnet, Isadore . . . . . . . . Houston, Texas
Badger, Elizabeth Miriam . Houston, Texas
Barnes, Dorothy Ruth . . . Houston, Texas
Barnes, Roy Trimble . . . Fort Worth, Texas
Barr, Tom William . . . . Dallas, Texas
Beckenbach, Edwin Ford . Dallas, Texas
Bering, Florence Catherine . Houston, Texas
Billups, J. T., Jr. . . . . Winters, Texas
Binyon, Lucy Agatha . . . Houston, Texas
Blackwell, Ruth Van Pelt . Houston, Texas
Blair, Janet . . . . . . . Clarksville, Texas
Bloxsom, George Graham. . Houston, Texas
Boelsche, Leslie . . . . Industry, Texas
Boone, Walter Goodrich . Nabasota, Texas
Borne, Herman G. . . . . Houston, Texas
Bourdon, Lynn Louis . . . Houston, Texas
Bourland, Joseph Wilbur, Jr. . Dallas, Texas
Boynton, George Wilbur Jr . Bellville, Texas
Bridgwater, William . . . Houston, Texas
Briggs, David Todd . . . Houston, Texas
Bright, Mamie . . . . Houston, Texas
Brisbine, Evelyn Josephine . Houston, Texas
Brooks, Catherine Marguerite Houston, Texas
Buhler, Charles Michael, Jr. . Victoria, Texas
Bush, Charles Richard . . . El Paso, Texas
Byrne, Anne Claire . . . Houston, Texas
Cabaniss, Weldon Burk . . Lockhart, Texas
Cairns, Adrian Bennett. . Houston, Texas
Canterberry, Clarence Wesley . Longview, Texas
Carll, Edgar Houston . . . Belton, Texas
ANNOUNCEMENTS

Cashion, William Richard . . Texarkana, Texas
Chitwood, Benjamin G. . . Lubbock, Texas
Clark, John Hogan . . Houston, Texas
Clarke, Helen Cartland. . . Houston, Texas
Cochran, Josephine Pearl . . Houston, Texas
Cole, Mildred Elizabeth . . Houston, Texas
Cook, Clara Frances Louise . . Houston, Texas
Crenshaw, Marvin Ancel . . South Houston, Texas
Cronin, Thomas Dillon . . Houston, Texas
Cullen, Roy Gustav . . Houston, Texas
DaCamara, Randolph Lawrence . . Laredo, Texas
Daley, Thomas Ellis . . Houston, Texas
Davies, Ilott Joseph . . Houston, Texas
Dawson, Frank Mathews . . Houston, Texas
Dawson, John Robert . . Houston, Texas
Dawson, Will Raymond . . Sinton, Texas
Denman, Arthur Bryan . . Houston, Texas
Discher, Erwin Rudolph . . Shiner, Texas
Duff, Lura Hannah . . Houston, Texas
Duffie, Ed Barrett . . Sour Lake, Texas
Duggan, Edmund Buchwalter . . Belton, Texas
Dunning, Alan . . Los Angeles, California
Dwigans, Forrest Payne . . Houston, Texas
Eckert, Milton Kirsch . . Houston, Texas
Fairchild, Margarete Carleston . . Houston, Texas
Farrington, Curtis Leon . . Houston, Texas
Fields, William Allen . . Houston, Texas
Fischer, Otis Rose . . Houston, Texas
Flagg, Archa Chrestian . . Malakoff, Texas
Fondren, Mary Catherine . . Houston, Texas
Friedman, Lloyd Kling . . Beaumont, Texas
THE RICE INSTITUTE

Furman, Herbert John . . . Houston, Texas
Gammill, Murry Jesse . . . Houston, Texas
Gammill, Oscar Elbridge, Jr. . Shreveport, Louisiana
Gehret, Marguerite Marie Louise . Houston, Texas
Gerke, Edward William . . . Fort Worth, Texas
Gill, Atherton Leslie . . . Houston, Texas
Grace, William Jeffries . . . Dallas, Texas
Gant, James Henry . . . Houston, Texas
Grant, Richard Stephen . . . Pascagoula, Mississippi
Green, Ola Mae . . . Houston, Texas
Guiteras, George Gustavo . . Key West, Florida
Haggart, Margaret . . . Houston, Texas
Hall, Walter Gardner . . . League City, Texas
Hamilton, Charles D. Whiteley . Houston, Texas
Hardy, Sidney Baron . . . Galveston, Texas
Hart, Gaylord Anthony . . . Dallas, Texas
Herring, Elmer . . . Victoria, Texas
Herting, Edward William, Jr. . Hartford, Connecticut
Herzik, Stella Cora . . . Houston, Texas
Hibbler, Mary Helen . . . Houston, Texas
Hickey, Ernest Pleasanton . . Houston, Texas
Hickey, Maude Isabel . . . Houston, Texas
Hildebrand, Avarilla Grace . . Houston, Texas
Hill, James Edwin . . . Houston, Texas
Hillsman, Joseph Winston . . Houston, Texas
Hood, Matilda Dale . . . Birmingham, Alabama
Howard, Dora Alice . . . Houston, Texas
Howerton, Bert Paul . . . Corpus Christi, Texas
Inkley, Mary Josephine . . . Houston, Texas
James, Edith Moore . . . Houston, Texas
Jenkins, William Fountain . . Houston, Texas

[ 152 ]
ANNOUNCEMENTS

Jett, Mary Virginia . . . . . Houston, Texas
Jinks, Leola Jewel . . . . . Houston, Texas
Kitchell, James Roderick . . Houston, Texas
Kreimeyer, James Harold . Port Arthur, Texas
Lay, Anna Rebecca . . . . . Denison, Texas
Lay, Roy Livingston . . . . . Yoakum, Texas
Liljestrand, Milton Oliver . Weslaco, Texas
Lindsey, Benjamin Slayden . San Antonio, Texas
Livengood, Helen . . . . . Bay City, Texas
Livergood, Russell . . . . . Houston, Texas
Lockman, Marjorie Adair . Houston, Texas
Loughridge, Robert Foster . Waco, Texas
Louis, Bliss . . . . . Houston, Texas
McAshan, Mary . . . . . Houston, Texas
McCaine, Walter Johnson . Houston, Texas
McConnell, Herbert Stevenson . Tampico, Mexico
McCorquodale, Marjorie Cooke . Houston, Texas
McDonald, Thomas Bruce . Georgetown, Texas
McIntyre, Pauline Dale . . . Houston, Texas
McKenna, Justine Frances . Houston, Texas
McKinnon, Walter Lawrence . Houston, Texas
McLain, Ruth Esther . . . . Missouri City, Texas
McWilliams, Hamlin Kendall . Eastland, Texas
Madsen, Martha Effie . . . . Danevang, Texas
Mahaffey, Fred, Jr . . . . . Houston, Texas
Means, William Henry . . . Houston, Texas
Melton, Bessie . . . . . Houston, Texas
Meyer, Arthur Roger . . . . Houston, Texas
Miller, Charles Arthur . Kempner, Texas
Miron, Sam . . . . . Houston, Texas
Monroe, Caroline Lillian . Houston, Texas
THE RICE INSTITUTE

Montgomery, Dora Lee . . . Houston, Texas
Moody, Betty . . . . . Houston, Texas
Morris, Isabel . . . . Houston, Texas
Murdock, Lloyd Hugh . . Houston, Texas
Nevill, Gale Erwin . . . Houston, Texas
Nino, Primitivo Leija . . Houston, Texas
Nordmeyer, Marie Alma . McAllen, Texas
Ogg, Jack McDonald . . Houston, Texas
Palmer, Cecil James . . Houston, Texas
Painter, James Harry, Jr . Houston, Texas
Parker, Lola Annette . . Harrisburg, Texas
Parker, Marshall Edward . Anderson, Texas
Parker, Mary Jane . . San Angelo, Texas
Parrish, Noel Francis . . Houston, Texas
Pevateaux, Johnnie Brock . Houston, Texas
Pickering, Edward Frank, Jr . Houston, Texas
Place, Ethel Elizabeth . . Houston, Texas
Pomerantz, Tillie . . Houston, Texas
Prescott, Jacqueline Campbell . Houston, Texas
Rawlinson, William Pierce . Silsbee, Texas
Reed, Arthur Burroughs . . Houston, Texas
Reynolds, Anne Elizabeth . Houston, Texas
Richter, Will Scott . . Dallas, Texas
Robertson, Miller Craig . . Houston, Texas
Robidoux, Finley Thomas . Houston, Texas
Rogers, Louise . . Houston, Texas
Rogers, Marian . . Houston, Texas
Roos, Milton Edwin . . Houston, Texas
Runion, Felix Anthony . . Houston, Texas
Rust, William Monroe, Jr . Houston, Texas
Ruth, James Anderson . . Houston, Texas

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ANNOUNCEMENTS

Saenger, Margaret Sophie . . . Beaumont, Texas
Savage, William Joe . . . . Forest Hill, Louisiana
Schuppan, Inga Mae . . . . Houston, Texas
Schwedler, Gustave Carl . . . Dallas, Texas
Seward, B.M. . . . . . . Knippa, Texas
Shannon, John Philip . . . . Houston, Texas
Shapiro, Della . . . . . . Houston, Texas
Sherrod, Henry Clay, Jr. . . Galveston, Texas
Sherwood, Marie Elizabeth . . Houston, Texas
Shofstall, Norton Forbes . . . Houston, Texas
Shoquist, Robert George . . Houston, Texas
Smith, Carey Olinthus . . . . Bay City, Texas
Smith, Frances May . . . . Houston, Texas
Smith, Thomas Ligon . . . . Houston, Texas
Spencer, Marian Isabella . . Houston, Texas
Spencer, Roy Dodd . . . . . . Houston, Texas
Stack, Theodore Francis . . DeRidder, Louisiana
Stephens, Mary Geneva . . . Bellaire, Texas
Stone, Paul . . . . . . Pearland, Texas
Street, Lois Emily . . . . Houston, Texas
Stowe, Mildred . . . . . . Houston, Texas
Suessmuth, Frances Johanna . Houston, Texas
Tabony, Joseph Henry . . . Houston, Texas
Thiel, Margie Wilma . . . . Houston, Texas
Tobin, Jack Melba . . . . . Houston, Texas
Tolle, John Clifford . . . . San Antonio, Texas
Tooley, Henry Clinton . . . Greenville, Texas
Tryon, Alice Adele . . . . Houston, Texas
Turrentine, Gordon Henry . . Houston, Texas
Van Cleave, Thomas Winlock . Ruston, Louisiana
THE RICE INSTITUTE

Vaughan, Willard Gordon . . Houston, Texas
Vogt, Christian Alphonse . . Victoria, Texas
Waples, Olive Rachel . . Houston, Texas
Warren, Kathryn Mae . . Houston, Texas
Weichert, Ernest Augustus . . Welsh, Louisiana
Westheimer, Eugene Gerald . . Houston, Texas
Whiteley, James M. . . Houston, Texas
Wildman, Enid Isabel . . Bellaire, Texas
Williamson, Gwendolyn . . Goldthwaite, Texas
Wilson, Kathryn . . Houston, Texas
Winston, George Jackson . . Houston, Texas
Womack, Zemma Erwin . . Houston, Texas
Wood, George Alexander . . Houston, Texas
Woodruff, Ella Frances . . Houston, Texas
Woodward, Margaret Ruth . . Houston, Texas
Worley, Will Ellis . . Houston, Texas
Wright, Arthur G., Jr. . . Dallas, Texas
Wright, John Harris . . Houston, Texas

SOPHOMORES*

Ables, Philip Augustus . . Texarkana, Texas
Ables, Robert Lee . . Texarkana, Texas
Abrhams, Alonzo Tooker William . . Houston, Texas
Adams, Lois May . . Alice, Texas
Aleo, Charles Joseph, Jr. . . Houston, Texas
Allen, Benjamin Hogan . . Houston, Texas
Allnoch, Joseph Daniel . . Houston, Texas
Allnoch, Marth Agnes . . Houston, Texas
Alsup, Patti Jean . . Galveston, Texas
Appell, William Morris . . Waco, Texas

*As classified October 1st, 1926

[ 156 ]
<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appleman, Lois Ethel</td>
<td>Beaumont, Texas</td>
</tr>
<tr>
<td>Arrants, Sarah Kathryn</td>
<td>Dallas, Texas</td>
</tr>
<tr>
<td>Ash, Beatrice Eleanor</td>
<td>Abilene, Texas</td>
</tr>
<tr>
<td>Austin, Frank Otis.</td>
<td>Houston, Texas</td>
</tr>
<tr>
<td>Avant, Hugh Clifford</td>
<td>Birmingham, Alabama</td>
</tr>
<tr>
<td>Axelrod, Isadore Meyer</td>
<td>Houston, Texas</td>
</tr>
<tr>
<td>Baehr, John Fain</td>
<td>Houston, Texas</td>
</tr>
<tr>
<td>Bailey, William Stuart</td>
<td>Houston, Texas</td>
</tr>
<tr>
<td>Baker, Malcolm Graham</td>
<td>Houston, Texas</td>
</tr>
<tr>
<td>Baker, Terry Arendt</td>
<td>McAllen, Texas</td>
</tr>
<tr>
<td>Barreda, Maria Ana</td>
<td>Laredo, Texas</td>
</tr>
<tr>
<td>Bayne, Harry Lee</td>
<td>Houston, Texas</td>
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<tr>
<td>Beall, William Henry</td>
<td>Alice, Texas</td>
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<tr>
<td>Beatty, Hazel Inez</td>
<td>Houston, Texas</td>
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<tr>
<td>Beissner, Henry Martin</td>
<td>Galveston, Texas</td>
</tr>
<tr>
<td>Bell, Charles Harrison</td>
<td>Waco, Texas</td>
</tr>
<tr>
<td>Benbury, Lemuel Schumacher</td>
<td>Houston, Texas</td>
</tr>
<tr>
<td>Benbury, Thomas, Jr.</td>
<td>Houston, Texas</td>
</tr>
<tr>
<td>Bennett, Malcolm Dorden</td>
<td>Houston, Texas</td>
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Bourgeois, Jasper Lesley . . . Welsh, Louisiana
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Schroeder, William Rake . . . . Dallas, Texas
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<td>Tinsley, Edna</td>
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ANNOUNCEMENTS

Tinsley, Mittie Sara . . . . . . Houston, Texas
Townsend, Henry . . . . . . Houston, Texas
Trotter, Mary Elanor . . . . . Houston, Texas
Underwood, Rosalie . . . . . Galveston, Texas
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Chavanne, Philip Matson . . . . Lake Charles, Louisiana
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