## CALENDAR, 1937-1938

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 5</td>
<td>Co-op Dept. Section I begins first term.</td>
</tr>
<tr>
<td>July 16-17</td>
<td>Registration for Summer School.</td>
</tr>
<tr>
<td>July 19</td>
<td>Summer School classes begin.</td>
</tr>
<tr>
<td>Sept. 10-17</td>
<td>Examinations: Summer School, Entrance, and Re-examinations.</td>
</tr>
<tr>
<td>Sept. 14</td>
<td>Registration of regular freshmen.</td>
</tr>
<tr>
<td>Sept. 15-18</td>
<td>Freshman Orientation, Physical Examination, and Registration of former students.</td>
</tr>
<tr>
<td>Sept. 20</td>
<td>Class work for first semester begins.</td>
</tr>
<tr>
<td>Sept. 27</td>
<td>Co-op Department Section II begins first term.</td>
</tr>
<tr>
<td>Nov. 25-27</td>
<td>Thanksgiving Holidays.</td>
</tr>
<tr>
<td>Dec. 18 (noon) to Jan. 3 (8 A.M.)</td>
<td>Christmas Holidays.</td>
</tr>
<tr>
<td>Jan. 3</td>
<td>Co-op Department Section I begins second term.</td>
</tr>
<tr>
<td>Jan. 27-Feb. 4</td>
<td>Examinations for first semester. Registration for second semester.</td>
</tr>
<tr>
<td>Feb. 7 (8 A.M.)</td>
<td>Class work for second semester begins.</td>
</tr>
<tr>
<td>March 21</td>
<td>Co-op Department Section II begins second term.</td>
</tr>
<tr>
<td>Apr. 14-16</td>
<td>Easter Holidays.</td>
</tr>
<tr>
<td>May 26</td>
<td>Senior final examinations begin.</td>
</tr>
<tr>
<td>June 2</td>
<td>Regular second semester examinations begin.</td>
</tr>
<tr>
<td>June 13</td>
<td>Commencement Day.</td>
</tr>
<tr>
<td>July 18</td>
<td>Summer School classes begin.</td>
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THE UNIVERSITY SYSTEM OF GEORGIA
STEADMAN VINCENT SANFORD, Chancellor

BOARD OF REGENTS

GOVERNOR E. D. RIVERS, Ex Officio    Atlanta, Georgia
MARION SMITH, Chairman, Atlanta, Georgia, State-at-Large
 Concurrently with the Governor.
JOHN G. KENNEDY, Savannah, Georgia, First District
 Term Expires July 1, 1939
JOHN MONAGHAN, Pelham, Georgia, Second District
 Term Expires July 1, 1941
GEORGE C. WOODRUFF, Columbus, Georgia, Third District
 Term Expires July 1, 1943
CASON CALLAWAY, LaGrange, Georgia, Fourth District
 Term Expires July 1, 1941
CLARK HOWELL, Jr., Atlanta, Georgia, Fifth District
 Term Expires July 1, 1943
MILLER BELL, Jr., Vice-Chairman, Milledgeville, Georgia, Sixth District
 Term Expires July 1, 1941
CHARLES M. MILAM, Cartersville, Georgia, Seventh District
 Term Expires July 1, 1941
JOHN W. BENNETT, Waycross, Georgia, Eighth District
 Term Expires July 1, 1943
SANDY BEAVER, Gainesville, Georgia, Ninth District
 Term Expires July 1, 1939
ABIT NIX, Athens, Georgia, Tenth District
 Term Expires July 1, 1943
GEORGE HAINES, Augusta, Georgia, State-at-Large
 Term Expires July 1, 1940
JACK LANCE, Young Harris, Georgia, State-at-Large
 Term Expires July 1, 1942
DR. J. KNOX GHOULSTON, Comer, Georgia, State-at-Large
 Term Expires July 1, 1940
L. W. ROBERT, Jr., Atlanta, Georgia, State-at-Large
 Term Expires July 1, 1942
LEONARD ROBERT SIEBERT, Secretary    State Capitol, Atlanta, Ga.
W. WILSON NOYES, Treasurer, State Capitol, Atlanta, Ga.

STANDING COMMITTEES OF THE FACULTY

The President is ex-officio a member of all standing committees.

Absences—Perry, Skiles, and Fulmer

Admission—Caldwell, Skiles, and Savant.

Advisory—Skiles, Boggs, Perry, Caldwell, Crenshaw, Field, Savant, McDaniel, and Dunkin.

Commencement Program—Crenshaw, Perry, Fitzgerald, Jones, and Fawell.

Curriculum—Skiles, Perry, Savant, Caldwell, Daniel, and King.

Executive—Skiles, Caldwell, and Field.

Graduate Courses—Boggs, King, and Knight.

Honors and Prizes—Skiles, Caldwell, and Boggs.

Hospital—Skiles, Armstrong, Alexander, and Dr. Floyd W. McRae.
 Medical Advisor.

Industrial Contact—Henry, Fitzgerald, Jones, King and Quigley.


Publications—D. M. Smith, McDaniels, and Howell.

Radio—Gibson, Cox, and Friedman.

Schedules—Skiles, Stamy, and Savant.

Standing—Skiles, Boggs, and Savant.

Student Supply Appointments—Caldwell, King, and Fitzgerald.
OFFICERS OF ADMINISTRATION

MARION LUTHER BRITTAIN, A.B., LL.D.  204 North Ave., N.W.
   President
WILLIAM VERNON SKILES, B.S., A.M., Sc.D.  1057 Springdale Road, N.E.
   Dean
HUGH HARRIS CALDWELL, A.B.  Georgia Tech
   Registrar and Secretary of the Faculty
GILBERT HILLHOUSE BOGGS, B.S., Ph.D.  733 Williams St., N.W.
   Dean of Graduate Courses
WILLIAM GILMER PERRY, A.M., Litt.D.  737 Techwood Drive
   Dean of General Studies
DOMENICO PIETRO SAVANT, B.S. in E.E., M.S. in E.E.  737 Techwood Drive
   Dean of Engineering
FLOYD FIELD, A.B., A.M.  2865 Tupelo Drive, S.E.
   Dean of Men
JAMES ERKSINE McDaniel, B.A., LL.B.  Cloudman Dormitory
   Director of the Cooperative Department
WILLIAM HARRY VAUGHN, B.S. in E.C., M.S. in Cer.E.  23 Ellington St.
   Director, State Engineering Experiment Station
*ARThUR VAN HENRY, C.E., M.S., Ph.D.  826 Peachtree St.
   Director of the Library
THOMAS H. JONES, Lt. Col. C.A.C., U.S. Army  16 Chatham Road
   Commandant, Military R. O. T. C.
R. M. Fawell, Captain, U.S. Navy  1450 W. Peachtree St.
   Commandant, Naval R. O. T. C.
**HENRY TAYLOR COMPTON  1384 West Peachtree St., N.W.
   School Physician
FRANK KING HOUSTON, C.P.A.  717 Williams St., N.W.
   Local Treasurer
ARTHUR HAMMOND ARMSTRONG, B.A., M.A.  633 Techwood Drive, N.W.
   Superintendent of Dormitories
ROGER SHEPPARD HOWELL, B.S. in M.E., M.Sc.  139 Fifth St., N.W.
   Director of the Evening School of Applied Science
HOWARD WARD MASON, B.S. in M.E., M.S., M.E.  Georgia Tech.
   Superintendent of Buildings and Grounds
ROY STEVENSON KING, M.E., M.Sc., Sc.D.  1293 Oxford Road, N.E.
   Superintendent of Shops and Power Plant
ESTELLE ALLEN, B.C.S.  College Park, Ga.
   Associate Registrar
HARRIET HENDERSON  826 Peachtree St., N.E.
   Secretary to the President
MRS. JAMES HENLEY CROSLAND  22 Lakeview Ave., N.E.
   Librarian

* Leave of absence 1936-37.
** Resigned.
A. J. Garing  309 Oakland St., Decatur, Georgia
                 Director of Music
William Felder Griffin  286 Fifth St.
                 Chief Engineer of Power Plant
Mrs. W. R. Camp  1797 Boulevard Drive, S.E.
                 P. B. X. Operator
Ida Marsh  Georgia Tech Hospital
                 Head Nurse
Mable Simpkins  Georgia Tech Hospital
                 Assistant Nurse
James W. May, Georgia Tech Y. M. C. A.
                 Y. M. C. A. Secretary

FACULTY

Marion Luther Brittain, A.B., LL.D.  204 North Ave., N.W.
                 President

Fred W. Ajax, B.A. and M.A. Techwood Dormitory
                 Assistant Professor of English
William Anderson Alexander, B.S. in C.E.  743 Penn Ave., N.E.
                 Professor of Physical Culture
Dick Robbins Anderson, Jr., A.B., A.M.  744 Williams Street, N.W.
                 Assistant Professor of English
Arthur Hammond Armstrong, B.A., M.A.  633 Techwood Drive, N.W.
                 Associate Professor of Economics and Social Science
Donald Henry Ballou, Ph.D.  678 Moreland Ave., N.E., Apt. 8
                 Assistant Professor of Mathematics
*Louis T. Bates, A.B.  154 Fourth St., N.W.
                 Instructor in English
*Fred Beatty, B.S. in E.E., M.S. in E.E.  1254 Euclid Ave., N.E.
                 Instructor in Electrical Engineering
Ralph Peters Black, A.B., M.S., C.E.  858 Oakdale Road, N.E.
                 Associate Professor of Civil Engineering
Gilbert Hillhouse Boggs, Ph.D.  733 Williams St., N.W.
                 Professor and Director of the Department of Chemistry and Chemical
                 Engineering
Frank Bogle, B.S. in M. E.  660 Lexington Ave.
                 Instructor in Engineering Drawing and Mechanics
Earle Edgar Bortell, B.S. in Eng., M.S.  750 Yorkshire Road, N.E.
                 Associate Professor of Physics
James Emory Boyd, Ph.D.  744 Williams St., N.W.
                 Assistant Professor of Physics.
John Roy Brandon  1760 Howell Mill Road
                 Instructor in Textile Engineering
Durant York Brannock, A.B., B.S., M.S., and Ch.E.
                 407 Eighth St., N.E.
                 Instructor in Chemical Engineering

* Resigned.
### Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>William Van Dunkin</td>
<td>Professor of Mechanical Engineering and Director, Industrial Management</td>
</tr>
<tr>
<td>Jesse Boland Edwards</td>
<td>Professor of Physics</td>
</tr>
<tr>
<td>James Lawton Ellis</td>
<td>Associate Professor of Electrical Engineering</td>
</tr>
<tr>
<td>Robert Miller Ervin</td>
<td>Associate Professor of Modern Languages</td>
</tr>
<tr>
<td>Dillon Evers</td>
<td>Instructor in Chemical Engineering</td>
</tr>
<tr>
<td>Walter P. Ewalt</td>
<td>Assistant Professor of Physics</td>
</tr>
<tr>
<td>Reed M. Fawell</td>
<td>Commandant, Naval R.O.T.C.</td>
</tr>
<tr>
<td>Floyd Field</td>
<td>Professor of Mathematics and Dean of Men</td>
</tr>
<tr>
<td>Thomas Witt Fitzgerald</td>
<td>Professor of Electrical Engineering and Head of the Department</td>
</tr>
<tr>
<td>Edwin Henry Folk Jr.</td>
<td>Assistant Professor of English</td>
</tr>
<tr>
<td>Horace Orion Foster</td>
<td>Instructor in Wood Shop</td>
</tr>
<tr>
<td>Harold B. Friedman</td>
<td>Associate Professor of Chemistry</td>
</tr>
<tr>
<td>Herman Kyle Fulmer</td>
<td>Associate Professor of Mathematics</td>
</tr>
<tr>
<td>James Herbert Gailey</td>
<td>Professor of Architecture</td>
</tr>
<tr>
<td>Joseph Gardner</td>
<td>Instructor in Electrical Engineering</td>
</tr>
<tr>
<td>Irvin H. Gerks</td>
<td>Instructor in Electrical Engineering</td>
</tr>
<tr>
<td>Count Dillon Gibson</td>
<td>Professor of Geology and Head of the Department</td>
</tr>
<tr>
<td>William Franklin Gresham</td>
<td>Assistant Professor of Chemistry</td>
</tr>
</tbody>
</table>

* Leave of Absence 1936-37.
** Leave of Absence Second Semester 1936-37.
John A. Griffin, A.B.  1224 Albemarle Ave., N.E.
  Instructor in English

Otis Miles Harrelson, B.S. in E.E., M.S. in M.E.  1074 Rock Spring Rd.
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Ralph A. Hefner, Ph.D.  907 Highland View
  Professor of Mathematics

John Henry Henika  894 Oak St., S.W.
  Foreman of Wood Shop

*Arthur Van Henry, Ph.D.
  826 Peachtree St., N.E.
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  Assistant Professor of Textile Engineering

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  Assistant Professor of Mechanical Engineering

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  Professor of Mechanical Engineering

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  Professor and Head of the Department of Engineering Drawing and Mechanics

*Leave of Absence 1936-37.
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Walter Reynolds, Jr., B.S. in M.E., M.Sc. 22 Glenwood Drive  
Assistant Professor of Mathematics

---

* Resigned.
** Leave of Absence Second Semester 1936-37.
Faculty

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* Leave of Absence 1936-37.

Graduate Assistants

Carl Bordenca, B.S. 135 Techwood Dormitory
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Graduate Assistant in Chemistry

J. N. Felton, B.S. in M.E. Tech Y.M.C.A.
Graduate Assistant in Mechanical Engineering

Graduate Assistant in Chemical Engineering

C. C. Grommet, B.S. in M.E. Tech Campus
Graduate Assistant in Mechanical Engineering

C. B. Holder, A.B. Techwood Dormitory
Graduate Assistant in Chemistry
JAMES HOLMES, B.A. 134 Techwood Dormitory
Graduate Assistant in Chemistry

H. V. LAMBERTI, B.S. in M.E.  Techwood Campus
Graduate Assistant in Mechanical Engineering

T. A. MAXWELL, B.S. in Chemistry  Tech Y.M.C.A.
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Graduate Assistant in Mechanical Engineering

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Graduate Assistant in Chemistry

HERMAN SEELIG, B.S. in Chem. Eng.  135 Techwood Dormitory
Graduate Assistant in Chemistry

Graduate Assistant in Chemical Engineering

ASSISTANTS

A. E. CANNON, B.S.  Biology

STUDENT ASSISTANTS

G. E. BEVIS  Mechanical Engineering
G. V. BUSSEY  Electrical Engineering
T. B. CAULFIELD  Physics
R. H. FAGAN  Physics
E. R. FLYNT  Physics
A. H. JENSEN  Mechanics
IRVING LIPTON  Mechanics
J. T. MUNDY  Physics
J. A. POTTER  Electrical Engineering
CECEL RHYNE  Mechanics
F. T. WALTERMIRE  Physics

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

Reserve Officers' Training Corps

THOMAS H. JONES, Lt. Col. C.A.C.
Commandant and Professor of Military Science and Tactics

HEADQUARTERS STAFF

STAFF SERGEANT H. L. ELLIS (D.E.M.L.)
Property and Finance

SERGEANT R. M. SIMMS (D.E.M.L.)

INFANTRY

Lt. Col. DONALD HENLEY, Inf.
Unit Commander

Assistants

MAJOR EDMUND J. LILLY, Jr., Inf.

SERGEANT D. S. PARCHMAN (D.E.M.L.)

COAST ARTILLERY CORPS

MAJOR WM. D. EVANS, C.A.C.
Unit Commander

Assistants

MAJOR DOUGLAS E. MORRISON, C.A.C.
CAPTAIN FRED B. WATERS, C.A.C.

SERGEANT E. G. PATRICK (D.E.M.L.)

SIGNAL CORPS

MAJOR EVAN D. CAMERON, Sig. C.
Unit Commander

Assistants

FIRST LIEUT. JOHN B. ALLEN, Sig. C.

SERGEANT DICK WEIR (D.E.M.L.)

ORDNANCE

CAPTAIN EDWARD C. FRANKLIN, O.D.
Unit Commander
DEPARTMENT OF NAVAL SCIENCE AND TACTICS

Reserve Officers' Training Corps

COMMANDING OFFICER

CAPTAIN R. M. FAWELL, U.S. Navy

Commandant and Professor of Naval Science and Tactics

STAFF

COMMANDER ROBERT S. HAGGART, U.S. Navy

LIEUTENANT-COMMANDER JAMES B. CARTER, U.S. Navy

LIEUTENANT SOLOMAN F. ODEB, U.S. Navy

LIEUTENANT RODMON D. SMITH, U.S. Navy

LIEUTENANT JAMES H. CARRINGTON, U.S. Navy

FRANK M. CRISWELL, C.G.M., U.S.N.R.

PAUL B. FICKES, C.S.M., U.S.N.R.

EUGENE ANHEIS, C.Y., U.S.N.R.

THOMAS A. HOWARD, C.S.K., U.S.N.R.

GENERAL INFORMATION

HISTORICAL SKETCH

On November 24, 1882, the General Assembly passed a resolution, introduced by Honorable N. E. Harris to consider the establishment of a technical school in Georgia. A commission of ten was appointed to visit the leading engineering institutions of the country, and in 1885, the law was passed appropriating $65,000 for the institution. In January, 1886, the first commission was appointed, consisting of Honorable N. E. Harris, S. M. Inman, O. S. Porter, E. R. Hodgson and Columbus Heard. Five places, Athens, Atlanta, Macon, Milledgeville and Penfield offered bids for the new school, and on October 20, 1886, Atlanta was chosen as the location. Professor M. P. Higgins of the Worcester Institute was secured to supervise the new work, and on October 7, 1888, the installation ceremonies were held at the Opera House in Atlanta.

CAMPUS

Five acres were purchased from the Peters Land Company at the outset, and later, Mr. Richard Peters donated four additional acres. The campus has been increased by purchase and gifts from time to time until it now comprises 44 acres. The original buildings destroyed by fire were replaced in 1891, and at present there are on the campus the following:

<table>
<thead>
<tr>
<th>Building</th>
<th>Year</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Building</td>
<td>1888</td>
<td>$80,000</td>
</tr>
<tr>
<td>Old Shop Building</td>
<td>1892</td>
<td>40,000</td>
</tr>
<tr>
<td>Knowles Dormitory</td>
<td>1898</td>
<td>55,000</td>
</tr>
<tr>
<td>Textile Building</td>
<td>1898</td>
<td>60,000</td>
</tr>
<tr>
<td>Swann Building</td>
<td>1900</td>
<td>60,000</td>
</tr>
<tr>
<td>Electrical Building</td>
<td>1901</td>
<td>50,000</td>
</tr>
<tr>
<td>President's House</td>
<td>1903</td>
<td>15,000</td>
</tr>
<tr>
<td>The Lyman Hall Laboratory</td>
<td>1906</td>
<td>50,000</td>
</tr>
<tr>
<td>Carnegie Building</td>
<td>1906</td>
<td>30,000</td>
</tr>
<tr>
<td>Whitehead Memorial Hospital</td>
<td>1910</td>
<td>30,000</td>
</tr>
<tr>
<td>Y. M. C. A. Building</td>
<td>1911</td>
<td>80,000</td>
</tr>
<tr>
<td>Power Plant</td>
<td>1914</td>
<td>80,000</td>
</tr>
<tr>
<td>Military Building</td>
<td>1917</td>
<td>10,000</td>
</tr>
<tr>
<td>Automobile Building</td>
<td>1918</td>
<td>5,000</td>
</tr>
<tr>
<td>Mechanical Building</td>
<td>1920</td>
<td>190,000</td>
</tr>
<tr>
<td>Physics Building</td>
<td>1923</td>
<td>225,000</td>
</tr>
<tr>
<td>Ceramics Building</td>
<td>1924</td>
<td>35,000</td>
</tr>
<tr>
<td>Julius Brown Memorial Hall</td>
<td>1925</td>
<td>85,000</td>
</tr>
<tr>
<td>Grant Field Stadium</td>
<td>1925</td>
<td>300,000</td>
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<tr>
<td>Emerson Addition to Chemistry Building</td>
<td>1925</td>
<td>100,000</td>
</tr>
</tbody>
</table>
N. E. Harris Dormitory .................................. 1926 75,000
Army Headquarters Building .......................... 1927 30,000
Dining Hall .............................................. 1928 150,000
Rose Bowl Building ...................................... 1929 75,000
Guggenheim Building ................................... 1930 100,000
Cloudman Dormitory .................................... 1931 75,000
Naval Armory ............................................. 1934 130,000
*Techwood, Inc., Dormitory ........................... 1935 250,000
W.P.A. Addition to Chemistry Building .............. 1936 40,000
Auditorium-Gymnasium .................................. 1937 93,000

Gifts

Several of these in part and much of the machinery and apparatus have been given by generous friends. Some of these are the Knowles and Swann Dormitories, the A. French Textile Building, Electrical Building, Lyman Hall Laboratory of Chemistry, Carnegie Library, Y. M. C. A. Building, Grant Field, and Stadium, The Joseph Brown Whitehead Memorial Hospital, and the New Physics Building, towards which the Carnegie Corporation made an appropriation of $150,000; the remainder of the $200,000 expended upon this structure was received from the Alumni and friends of the school, through subscriptions to the Greater Tech Campaign Fund of $1,585,080.11. By will, Honorable Julius L. Brown left two-thirds of his estate to the school, and this is believed to be when realized in full approximately $200,000. Mrs. Josephine Cloudman left the residue of her estate to the endowment fund in amount believed to be approximately $70,000. In 1930, the Guggenheim Board gave $300,000 for the establishment of a Department of Aeronautical Engineering at Georgia Tech. In addition, generous friends have contributed loan funds to help needy students, as will be shown later under the head of Scholarships and Prizes.

Presidents and Trustees

Dr. I. S. Hopkins was the first President of the Georgia School of Technology. While at the head of Emory College in 1886, there was built under his direction the first shop for technical training of college men in this State. Naturally, he was the choice of the Trustees for leadership in the new work. He served until his health failed in 1896.

Dr. Lyman Hall, Professor of Mathematics at the School, a graduate of West Point, was the second president. The continuous effort to meet the conditions required by the General Assembly in providing funds for the new buildings undermined his health, and he died in 1905.

*Owned by the Federal agency, Techwood, Inc., for use of the Georgia School of Technology.
GENERAL REGULATIONS

The regular session officially opens on Wednesday following the second Friday in September. For further details see calendar on page 2. All students are urged to be present at the beginning of the term, since those who enter classes late are seriously handicapped. Freshmen, except those in the co-operative course, are required to report for registration at 9 a.m. or 2 p.m. on Tuesday, September 14, 1937.

By order of the Board of Regents all freshmen are required to take placement tests in English, Mathematics, General Science, and World History. This work begins 8 a.m. on Wednesday, September 15, 1937, and continues thru the week including besides the placement tests, physical examination, payment of fees, use of Library, etc. Any transfer student who is rated as a freshman (i.e., 50% or more of his schedule in the freshman class) is required to take the above tests.

ENTRANCE REQUIREMENTS

An applicant may be admitted to the freshman class by certificate under the following conditions:

1. He must have graduated from an accredited school with a record high enough to indicate that he is prepared for college work.
2. He must meet the requirements in units as shown below.
3. He must be at least sixteen years of age.

The institution reserves the right to require entrance examinations of any applicant whose record indicates that he is not adequately prepared to do college work. Such examinations may also be required of those who have finished high school more than one year prior to entering college. See “Admission by Examination.”

Those who have attended a college or other educational institution since graduation from preparatory or high school must present a record of such attendance with the credits received and an honorable discharge. See “Admission with Advanced Standing.”

SPECIFIED OR REQUIRED UNITS

(It is very important that all of these be presented on entrance. A qualitative condition, if allowed, must be made up within one year.)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>1</td>
</tr>
<tr>
<td>Algebra</td>
<td>2</td>
</tr>
<tr>
<td><em>Physics</em></td>
<td>1</td>
</tr>
<tr>
<td>Plane Geometry*</td>
<td>1</td>
</tr>
<tr>
<td>Optional Units, at least</td>
<td>7</td>
</tr>
</tbody>
</table>

*Solid Geometry also is strongly recommended.

An applicant for Architectural, Industrial Management, or regular Textile Course may substitute another science for Physics.
Applicants for Architecture should offer two units in French.

Prospective students in Chemistry or Chemical Engineering should take either French or German in High School.

**Optional Units**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>1</td>
</tr>
<tr>
<td>Sol. Geometry</td>
<td>½</td>
</tr>
<tr>
<td>Trigonometry</td>
<td>½</td>
</tr>
<tr>
<td>Adv. Arithmetic</td>
<td>½</td>
</tr>
<tr>
<td>Hist. &amp; Civics</td>
<td>1 to 3</td>
</tr>
<tr>
<td>Economics</td>
<td>½ to 1</td>
</tr>
<tr>
<td>Latin or Greek</td>
<td>1 to 4</td>
</tr>
<tr>
<td>Ger. French or Span</td>
<td>1 to 3</td>
</tr>
<tr>
<td>Bible</td>
<td>½ to 1</td>
</tr>
</tbody>
</table>

Ordinarily not more than three units will be allowed from the group including Drawing, Commerce, Agriculture, Military and Shop Work.

Special attention is called to the required units in Algebra, as a great many students are conditioned in this subject. To receive entrance credit, for the second year in algebra the course must have included Logarithms, Ratio, Proportion, Variation, Binomial Theorem and Progressions.

We wish to urge that students have a good working knowledge of all the Mathematics required for entrance. It frequently happens that members of the Freshman Class must be turned back to review their foundation work in Algebra. During the last half year of the high school course the prospective engineering freshman should be given a thorough review of simplifications, exponents, radicals and equations. Such a review will be of great value and may prevent discouragement and failure in college work.

**Admission by Examination**

Applicants with fifteen or more units who are not eligible for admission by certificate may enter by passing qualifying examinations. These examinations are: English, Advanced Algebra, Plane Geometry and Physics. Students who expect to take Architecture, Textile Engineering or Industrial Management may substitute some other science for Physics.

Two general entrance examinations will be held: One at the time of the final examinations of the spring term, and the other at the opening of the fall term. Applicants for admission to the Freshman Class will be admitted to either or both of these examinations, and by special arrangements with the principal may stand entrance examinations at their local schools about June 1st. For full particulars address the Registrar, Georgia School of Technology.

**Tuition and Fees**

*For students whose parents are legal residents of Georgia:*

<table>
<thead>
<tr>
<th></th>
<th>1st Term</th>
<th>2nd Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>$50.00</td>
<td>$50.00</td>
</tr>
<tr>
<td>Student Activities Fee</td>
<td>10.25</td>
<td>10.25</td>
</tr>
<tr>
<td>Deposit for Laboratories, etc</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>Medical Fee</td>
<td>2.00</td>
<td>2.00</td>
</tr>
<tr>
<td><strong>Total charges</strong></td>
<td>$72.25</td>
<td>$60.25*</td>
</tr>
</tbody>
</table>

*For students whose parents are not legal residents of Georgia:*

<table>
<thead>
<tr>
<th></th>
<th>1st Term</th>
<th>2nd Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>$100.00</td>
<td>$100.00</td>
</tr>
<tr>
<td>Student Activities Fee</td>
<td>10.25</td>
<td>10.25</td>
</tr>
<tr>
<td>Deposit for Laboratories, etc</td>
<td>10.00</td>
<td>10.00</td>
</tr>
<tr>
<td>Medical Fee</td>
<td>2.00</td>
<td>2.00</td>
</tr>
<tr>
<td><strong>Total charges</strong></td>
<td>$122.25</td>
<td>$110.25*</td>
</tr>
</tbody>
</table>

*To this amount must be added laboratory fees for the 1st term. The normal laboratory fee for freshmen is $3.00.*
Deposit for Laboratories, etc. This is not a fee but a deposit, required of every student upon admission, and must be kept intact as long as he is in school. All laboratory or other similar charges are made against the student and deducted from this deposit. Some laboratory courses carry special fees, the amounts of which are given in the description of the courses. At the beginning of each term the student pays the amount of these charges for the preceding term, and keeps the credit balance at $10.

**Summary of Expenses**

Below is an estimate of the necessary expenses for the first half year of a freshman whose parents are legal residents of Georgia and who is taking the regular course. Those whose parents are not legal residents of Georgia must add $50.00 to the figures given. Students entering the cooperative courses should consult the bulletin issued by that department.

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and Fees</td>
<td>$ 72.25</td>
<td>$72.25</td>
</tr>
<tr>
<td>Board, Room and Laundry</td>
<td>120.00</td>
<td>175.00</td>
</tr>
<tr>
<td>Uniform</td>
<td>25.00</td>
<td>25.00</td>
</tr>
<tr>
<td>Books and Equipment</td>
<td>20.00</td>
<td>35.00</td>
</tr>
</tbody>
</table>

**Total for First Term**: $237.25

Expenses for second term should average $40.00 less than the above figures.

**Physical Examinations**

Each student upon registration and before attendance at any classes is required to take a physical examination, which is given by a corps of specialists, and the fee for which is shown above.

For the school year 1937-38 the examinations will be held from Wednesday, September 15 through Saturday, September 18.

An additional fee of $2.00 will be charged each student who fails to take this examination when scheduled. Medical certificates from elsewhere will not be accepted.

R. O. T. C.

All freshmen and sophomores, except aliens and those physically unfit, are required to take military or naval training. The freshman military uniform is furnished at a cost of $25.00 which amount must be paid to the Treasurer when the student enters for the first time. Further information will be found on those pages of this catalog which are headed "Military Science and Tactics."

A student who is physically disqualified for military or who is not a citizen of the United States must present for graduation six hours of extra credit for the two-year basic course in Military.

**Miscellaneous**

Each member of the Senior Class must pay a diploma fee of $5.00 before graduating.

Examinations at other than the regular examination times will be granted in exceptional cases only and by Faculty action. A fee of $2.00 will be charged in all such cases.

A fee of $2.00 will be charged to old students reporting late for registration or payment of fees without a valid excuse.

The student is advised to defer the purchase of drawing instruments and materials until he can have the direction of the professors in their selection. The prices range from $10.00 to $20.00.

No fees are refunded to students who are required to withdraw on account of conduct or for failure in work or who may withdraw for any reason, except for disabling sickness, properly certified to by a reputable physician. In the latter event, an equitable prorated amount will be refunded, provided the student is not able to return to the School before the end of the term in which he withdraws.

The remainder of the laboratory deposit may be returned to the student at the end of the school year, provided he presents a written statement from his parent or guardian that he has withdrawn from the institution.

**Dormitories**

All students in the freshman class who do not reside with their parents, near relatives, or bona fide guardians legally appointed, are required to live in the school dormitories for the entire school year. This applies also to transfers from other colleges, who are rated here as freshmen. Students in other classes who are assigned to a dormitory must remain there throughout the year. The School has dormitory accommodations for about 500 students. Those who expect to enter the freshman class should write early in the preceding term for a room reservation and should state which dormitory is preferred. A deposit will be required with each reservation as explained below.

Address all correspondence about dormitory reservations to the Superintendent of Dormitories, and not to the Registrar's office.

**Knowles Dormitory**

The Knowles Dormitory, which is one of the older buildings, has been remodeled recently, and many students prefer it both for its convenient location and for the lower rates. Three students are assigned to a room, and the rate for each is $22.50 per term, payable in advance.

**Harris Dormitory**

This building is located on Techwood Drive immediately across the athletic field from the center of the campus. Two students are assigned to a room and the rate for each is $45 per term, payable in advance for the term of four and a half months.
GEORGIA SCHOOL OF TECHNOLOGY

JULIUS BROWN MEMORIAL HALL

This dormitory has accommodations for 100 students, two in each room. The rates are $45 per term per student payable in advance for the term of four months and a half.

CLOUDMAN HALL

This new dormitory is open to co-operative students. The room rent is $22.50 for a term of 12 weeks. Co-operative freshmen who are non-residents of Atlanta are required to send in advance a deposit of $7.50 for a room reservation.

TECHWOOD DORMITORY

Through the Federal Government the Techwood Dormitory has been recently erected at a cost of $250,000 on a lot adjacent to the Georgia Tech Campus. This building is not open to Freshmen, but students in other classes may obtain rooms there at rates of $8 or $10 per month per person.

DORMITORY DEPOSITS AND LIVING EXPENSES

(Make all checks payable to Georgia School of Technology and mail remittance to Mr. F. K. Houston, Treasurer.)

All students who make dormitory reservations are required to deposit with the Treasurer before September 1st the amount shown below:

For Knowles Dormitory........................................... $22.50
For Harris Dormitory........................................... 45.00
For Brown Memorial Hall........................................ 45.00

In case the student finds it impossible to enroll, the deposit will be refunded provided notice is given the President not later than September 4th.

Students who room in the dormitories are required to furnish the following articles. One pillow, three pillow cases, four sheets, blankets or comforts, towels, and other small and portable articles needed about their rooms. The articles named should be brought from home. The school furnishes with each room: Beds (single three-quarter width), mattress, springs, wardrobe, or closet, washstand, bureau and table.

THE DINING HALL

The dining hall is thoroughly modern and sanitary throughout. The plant embodies the best features of the cafeterias in use in the leading colleges and universities. It accommodates more than 500 students at one time, and provides table service for more than 1500. Through this service, it is possible to furnish meals at cost to a majority of the students, and thus effect a substantial reduction in their living expenses.

Students may take their meals in the college dining hall at a rate of $15 to $20 per month, payable monthly or on the cafeteria plan if preferred.

THE GENERAL REGULATIONS

LAUNDRY

Laundry is handled by contract with one company. The student receives a discount of 25% on his actual bill which usually averages seventy-five cents to a dollar per week. All students in the dormitories are required to send their laundry to this company.

EXAMINATIONS

Final examinations are held at the end of each term. Students may be dropped from the roll of their classes at any examination, when they do not meet the requirements, as well as at any time when they neglect their studies and fall hopelessly behind their classes. No fees are refunded under such circumstances.

The General Assembly of Georgia requires each Senior to pass a satisfactory examination on the State and Federal Constitutions as a prerequisite for graduation. Instruction is given by lecture and otherwise in these subjects, and the required examination is given in March or April.

REPORTS

Reports of the standing of students are issued at the close of each term.

At the end of each period of six weeks reports of students whose work is unsatisfactory in any subject are posted on the bulletin boards of the departments, and copies of such reports are mailed to parents.

The Faculty will drop from the rolls at any time a student whose record in scholarship, attendance, or conduct is plainly unsatisfactory.

CHANGES OF COURSES AND WITHDRAWALS

Changing from one course to another, in some cases, is highly advisable, but is to be discouraged unless there are valid reasons for such a change. In all cases where the student wishes to change his course or to withdraw from the school, he must file written permission from his parent or guardian to this effect.

It is extremely important that the parent notify the President of the Institution promptly when a student withdraws on account of illness or for any other reason.

MARKING OR GRADING SYSTEM

The following marking system is now in effect: A—Excellent; B—Good; C—Fair; D— Barely Passing; E—Conditioned; F—Failure. A mark of E will entitle the student to a re-examination the following September if he is otherwise eligible to continue. However, a student having a mark of E in a first term subject will ordinarily repeat it if offered during the second term. A subject carrying a mark of F must be repeated.

A mark of D is passing in a single subject but a general average of approximately C is required for graduation.
DEPARTMENT OF AERONAUTICAL ENGINEERING
Daniel Guggenheim School of Aeronautics

Professor Knight, Instructors Mills and Schwartz, Assistant
Montgomery, and Associate Professor Johns (Part-time)

GENERAL INFORMATION

The Department of Aeronautical Engineering, which is known as the Daniel Guggenheim School of Aeronautics, was established in 1930 through a gift of $300,000 from the Daniel Guggenheim Fund for the Promotion of Aeronautics. The purpose of this award was to establish opportunities at the Georgia School of Technology for study and research of the highest order in the field of aeronautics.

The School of Aeronautics now offers four alternatives to prospective students:

1. Students who were Juniors, Sophomores, and Freshmen in 1935-36 may choose the four-year course under the Old Plan, as given below, and at the end of the fourth year receive the degree of Bachelor of Science in Aeronautical Engineering. The number of Juniors selected for this course is limited to eighteen. This course will be discontinued with the graduation of the class of 1939.

2. Students may take the four basic aeronautical courses, A. E. 131, 133, 141, and 142, listed below, in the Senior year of the course in General Engineering and receive the degree of Bachelor of Science in General Engineering at the end of the fourth year. This course is suited to students wishing to obtain employment with the air transport companies and is recommended for students who contemplate taking fifth year or graduate work in Aeronautical Engineering. For information on the General Engineering course, see page 29.

3. Students who have received the degree of Bachelor of Science in General, Mechanical, Electrical, or Civil Engineering may obtain the degree of Bachelor of Science in Aeronautical Engineering by taking a fifth year of work designated as the New Plan. This broad training in Aeronautical Engineering will enable the student to qualify in the design and manufacture of aircraft and aeronautical accessories.

4. Students who have received the degree of Bachelor of Science in Aeronautical, General, Mechanical, Electrical, or Civil Engineering may obtain the degree of Master of Science in Aeronautical Engineering by completing a course consisting of intermediate and graduate subjects plus a thesis, the curriculum in each case to be approved by the Committee on Graduate Courses. This advanced work will prepare the student for research or teaching in aeronautics. Most candidates for this degree, and especially those who have not taken undergraduate courses in aeronautics, will find it necessary to spend more than one year in fulfilling the requirements. For complete information on graduate courses see page 158 of this catalogue.

EQUIPMENT

The School of Aeronautics is well equipped for offering laboratory work to augment and lend interest to the theoretical courses. Most of this equipment is also suitable for research projects conducted by graduate students and members of the staff.

The School is housed in a large building designed especially for it. Among other things this building contains a 9 ft. wind tunnel, a 2½ ft. wind tunnel, an aircraft structural testing laboratory, and a laboratory for the testing of small high speed engines. The School also has its own machine and woodworking shop in which all its models and special apparatus are constructed. A large drafting room is provided adjacent to which is a room containing structural exhibits for the use of design students. A comprehensive and completely indexed reference library on aeronautical subjects is also located in the building. In addition, the Mechanical Engineering Department possesses three large aeronautical engines and dynamometer equipment.
# Aeronautical Engineering

## Freshman Year

### First Term

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Subject</th>
<th>Class</th>
<th>Lab.</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inorganic Chemistry</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Chem. 3 or 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. 9</td>
<td>Engineering Drawing</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Eng. 11</td>
<td>Composition and Rhetoric</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Math. 17</td>
<td>Elementary Functions</td>
<td>5</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>M. L.</td>
<td>French, Spanish or German</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>or S.S. 11</td>
<td>Social Science</td>
<td>5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>R.O.T.C. 1</td>
<td>Military or Naval Instruction</td>
<td>5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Or.</td>
<td>Orientation</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TOTAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16</td>
<td>15</td>
<td>18.5</td>
</tr>
</tbody>
</table>

### Second Term

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Subject</th>
<th>Class</th>
<th>Lab.</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem. 4 or 8</td>
<td>Inorganic Chemistry</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Dr. 10</td>
<td>Engineering Drawing</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Eng. 12</td>
<td>Composition and Rhetoric</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Engr. 1</td>
<td>Introduction to Engineering</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Math. 18</td>
<td>Analytic Geometry</td>
<td>5</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>M. L.</td>
<td>French, Spanish or German</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>or S.S. 12</td>
<td>Social Science</td>
<td>5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>R.O.T.C. 2</td>
<td>Military or Naval Instruction</td>
<td>5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TOTAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16</td>
<td>15</td>
<td>19.5</td>
</tr>
</tbody>
</table>

## Sophomore Year

### First Term

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Subject</th>
<th>Class</th>
<th>Lab.</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch. E. 67</td>
<td>Metallurgy</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Dr. 25</td>
<td>Engineering Drawing</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Eng. 33</td>
<td>Humanities</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Math. 23</td>
<td>Calculus</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>M. E. 2 or 16</td>
<td>Wood or Machine Laboratory</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Phys. 23</td>
<td>Physics</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>R.O.T.C. 3</td>
<td>Military or Naval Training</td>
<td>5</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TOTAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15</td>
<td>14</td>
<td>19.5</td>
</tr>
</tbody>
</table>

### Second Term

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Subject</th>
<th>Class</th>
<th>Lab.</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. E. 21</td>
<td>Surveying</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Dr. 26</td>
<td>Engineering Drawing</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Eng. 34</td>
<td>Humanities</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Math. 24</td>
<td>Calculus</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>M. E. 16 or 2</td>
<td>Machine or Wood Laboratory</td>
<td>6</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Phys. 24</td>
<td>Physics</td>
<td>4</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>R.O.T.C. 4</td>
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### Requirement

1. **A Note:** Choice of A. E. 148 or A. E. 158.
FIFTH YEAR COURSE IN AERONAUTICAL ENGINEERING
(New Plan)

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1Note: Fifth year students who have already taken these courses must substitute approved electives.

2Note: Choice of A. E. 148, A. E. 158, or A. E. 164.

COURSES OF INSTRUCTION

NOTE: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit.

Senior A. E. and G. E. and Fifth Year A. E., first term, 5-0-5.
Study of airflow as related to the airplane including the calculation of performance, and static stability.

A. E. 133. THEORY OF AIRCRAFT STRUCTURES. Prerequisites: Mech. 40, 48.
Senior A. E. and G. E. and Fifth Year A. E., first term, 3-0-3.
Development of the basic theory of structural analysis progressing through the methods of analysis for complex structures and concluding with applications to the modern all metal type of airplane.

A. E. 141-142. AIRPLANE DESIGN I-II. Prerequisites: Mech. 40, 48.
Parallels A. E. 131, 133.
Design of a single-motored stressed skin type airplane in accordance with the U.S. Department of Commerce Airworthiness requirements including stress analysis for the more important loading conditions.

A. E. 145-146. SEMINAR.
Senior and Fifth Year A. E., first and second terms, 1-0-1.
Scheduled meetings at which individual students present technical papers on important current aeronautical developments, the reading of each paper being followed by a class discussion.

A. E. 148. AIRPLANE DETAIL DESIGN. Prerequisites: A. E. 131, 133, 141.
Senior and Fifth Year A. E., second term, 0-3-1.
Detail design and layout of aircraft fittings and sub-assemblies and preparation of production drawings.

A. E. 152. DYNAMICS OF THE AIRPLANE. Prerequisite: A. E. 131.
Senior and Fifth Year A. E., second term, 3-0-3.
Mathematical study of dynamic stability and certain special maneuvers such as the spin.

Fifth Year A. E., first term, 0-3-1.
Testing of aircraft materials and structural elements to show extent of agreement between theory and experiment and to acquaint the student with aircraft structural testing methods.

Senior and Fifth Year A. E., first term, 0-3-1.
Testing of a complete airplane model in the 2½' wind tunnel to demonstrate the value of this form of testing to the airplane designer.

A. E. 158. WIND TUNNEL LABORATORY II. Prerequisite: A. E. 157.
Senior and Fifth Year A. E., second term, 0-3-1.
Study of special wind tunnel problems for students interested in aerodynamic research.

Fifth Year A. E., first term, 3-0-3.
Theory of instrumentation with applications to airline and aeronautical research instruments.

A. E. 164. AERONAUTICAL INSTRUMENT LABORATORY. Prerequisite: A. E. 163.
Fifth Year A. E., second term, 0-3-1.
Adjustment, calibration, and use of airline and aeronautical research instruments.

A. E. 166. PROPELLER DESIGN. Prerequisites: A. E. 131, 133.
Fifth Year A. E., second term, 1-3-2.
Study of the aerodynamic and structural design of aircraft propellers using the blade element theory.

For Graduate courses see page 165 in this catalog.

DEPARTMENT OF ARCHITECTURE

PROFESSORS BUSH-BROWN AND GAILEY; ASSOCIATE PROFESSORS MORENUS AND ROWLAND; ASSISTANT PROFESSORS SIEGLER AND JORGENSEN

The course in Architecture was opened to the students in the autumn of 1908 as one of the full professional courses in the Georgia School of Technology. The regular course extends over five years, leading to the degree of Bachelor of Architecture.

The Department of Architecture is a member of the Association of Collegiate Schools of Architecture. The degree carries with it certain examination immunities for those seeking licenses to practice architecture.

The new five-year curriculum in Architecture as contained in this catalogue went into effect beginning September, 1934. Students who intend to enter the Department of Architecture should have two units in French or German for admission. Except for one course, An Introduction to Architecture, the freshman year is virtually the same as for the men taking Engineering. At the beginning of the Sophomore year students taking Architecture will be called upon to select either the Design option or the Structural option. Both of these options lead to the degree of Bachelor of Science at the end of the four-year course. For those who select Option No. 1, the Design option, and intend to become practicing architects, a fifth year will be given leading to the degree of Bachelor of Architecture. For those who may wish to hold a position in almost any branch of the building industry, either four-year option will furnish a preparation.

The fifth year is for men whose intention it is to become architects, and only such men as complete the five-year course will receive a degree in Architecture. A student will be admitted to the fifth year only upon recommendation of the faculty of the Department.

The architect is, more than any one else, responsible for the safe, useful, and aesthetic realization of our needs as to shelter. He is the natural leader in the building industry. He should be something of an artist, an engineer, and an executive. He must combine common sense and imagination in order to bring into being structures which are to be permanent and serviceable in addition to expressing their purpose.
It is evident that a broad foundation of academic training is necessary. The fundamental and cultural courses include English, the Social Sciences, Physics, Mathematics, and Modern Language. In addition, the purely professional subjects may be classified under a number of general headings. For the five-year professional course Option No. 1, these are listed as follows:

1. **Architectural Design.** (4 yrs. 50 cr. hrs.) Individual creative work on the part of the student representing analysis and solution of architectural problems in the form of presentation drawings.

2. **Architectural Engineering** (2½ yrs. 19 cr. hrs.) closely associated with the above and including building materials, structural theory and design, and the mechanical plant.

3. **History** (2 yrs., 10 cr. hrs.) The history of the architecture of the Western World from Egypt to, and including, the present.

4. **Freehand Drawing** (4 yrs., 12 cr. hrs.) charcoal, watercolor, pencil rendering, life drawing, etc.

5. **Graphics** (1 yr., 5 cr. hrs.) Descriptive Geometry, Shades and Shadows, and Perspective.

6. **Professional Practice** (1 yr., 3 cr. hrs.) The business, legal, and ethical phases of architectural practice.

**COMBINATION COURSE**

By taking additional courses during at least one summer session, it is possible to take Option 2 receiving the B.S. degree with a major in Architectural Engineering at the expiration of four years and at the same time qualify to receive the B. of Arch. degree at the end of the fifth year. A special program of courses should be determined with the approval of the Head of the Department by the end of the Freshman Year.

**SPECIAL COURSE**

Under certain conditions special students may enroll in the Department with the intention of concentrating on professional subjects. To be classified as a Special Student, a man must be a high school graduate; he must have had at least three years of experience in the office of a practicing architect or the equivalent; and he must be ordinarily at least twenty-one years of age. The special course is intended for mature men of proved ability who have become definitely committed to architecture as a life work. Letters of recommendation from employers testifying to length and quality of service are required, and no applicant will be finally admitted except after an interview with the Head of the Department. At the successful completion of the required professional studies, for which a minimum of three years should be anticipated, such men are entitled to a Certificate of Proficiency.

**Equipment**

The quarters occupied by the Department of Architecture provide for two large drafting rooms, a lecture room, a library, a freehand studio, and several smaller rooms and offices. The library is part of the school library, but functions as a separate departmental library, and all architectural books are permanently housed in the department. Books and documents, which serve as such an important part of the work, are easily accessible to the students and are used extensively in Design, History, and other courses. The library contains some 1,800 volumes, and is kept up to date by constant additions.

**Scholarships and Loan Funds in Architecture**

The Georgia Chapter of The American Institute of Architects has donated $200.00 to be used as a loan fund to help students in architecture. Through the generosity of Mrs. Blanche Coleman of Milwaukee, Wisconsin, a scholarship of $60.00 per year has been established as a memorial to her son, Holland Coleman, and is awarded to a deserving student in the Department.

**THE REGULAR COURSE IN ARCHITECTURE**

**FRESHMAN YEAR**

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**Note:** A student entering without French or German, will be required to take two years of one or the other, except that this will not apply to a man selecting Option No. 2.
### Sophomore Year (Option No. 1—Architectural Design)

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**Note:** A student entering with advanced standing who can be given credit for Chemistry, may substitute this for Physics.

### Junior Year (Option No. 1—Architectural Design)

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### Senior Year (Option No. 1—Architectural Design)

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### Fifth Year (Option No. 1—Architectural Design)

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**Second Term**

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<td>Arch. 70</td>
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<td>Arch. 71 &amp; 72</td>
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<td>Arch. 79 &amp; 80</td>
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GEORGIA SCHOOL OF TECHNOLOGY

ARCHITECTURE

SOPHOMORE YEAR (Option No. 2—Architectural Engineering)

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JUNIOR YEAR (Option No. 2—Architectural Engineering)

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DEPARTMENT OF ARCHITECTURE

SENIOR YEAR (Option No. 2—Architectural Engineering)

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<td>Arch. 47</td>
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<td>E. 51</td>
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COURSES OF INSTRUCTION

NOTE: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit.

ARCH. 1 and 2. INTRODUCTION TO ARCHITECTURE.

Freshman, first term, 2-3-3, second term 1-6-3.

A survey of the nature of Architecture, its relation to human progress, its place in modern life, the function of the architect. The various phases of the student's future training in school are taken up in an elementary way, both in class and in the drafting room. The student is thereby given an idea of and some preparation in the work that is to come in later years,—the relationship and interdependence of the various courses of instruction are explained and their purpose made clear.

Text: Pickering's Architectural Design.

ARCH. 6—DESIGN, WORKING DRAWINGS, AND STRUCTURAL DESIGN.

6a and 6b—Juniors, option No. 2, first and second term, 1-12-5.

6c and 6d—Seniors, option No. 2, first and second term, 1-16-6.

This course is in part similar to Arch. 11 but includes, besides the work in design, carrying certain problems through the working-drawing stage and later design problems are used as a basis for construction problems including computations and drawings of structures of wood, steel and concrete.
ARCH. 9a and 9b. FREEHAND DRAWING.

Sophomores, first and second term, 0-3-1.

Drawing from simple plaster casts in pencil and charcoal. Principles of proportion and values are stressed.

ARCH. 9c and 9d. FREEHAND DRAWING. Prerequisite Arch. 9b.

Juniors, first and second term, 0-3-1.

A continuation of Arch. 9b, the casts now used being of sculptural architectural details.

ARCH. 9e and f. FREEHAND DRAWING. Prerequisite, Arch. 9d.

Seniors, first and second term, 0-3-1.

Drawings from casts of classical sculptures.

ARCH. 11. ARCHITECTURAL DESIGN.

11a, 11b.—Sophomore (Elementary) 1-12-5.
11c, 11d, 11e, 11f.—Junior and Senior (Intermediate) 1-16-6.
11l, 11lb.—Fifth year (Advanced) 1-21-8.

Laboratory fee, Juniors, Seniors and Fifth Year men, $7.50 per term to cover registration in B. A. I. D.

Programs giving conditions of a problem are issued at intervals to the class. Each student, with individual criticism and under the guidance of the instructor, works out and presents his own solution. The drawings by students of a class, turned in together at a specified time, are judged by a jury consisting of members of the faculty, assisted, ordinarily, by one or two practicing architects of Atlanta. The problems assigned are at first simple; in the intermediate classes medium sized buildings are studied and designed; in advanced work the programs deal with larger buildings or groups of buildings constituting problems of greater complexity.

Programs issued by the Beaux Arts Institute of Design, New York, are used very largely. Each major problem covers a period of about six weeks. Short problems and one-day sketches without criticism are also assigned from time to time to encourage independence of thought, originality, and rapidity of expression.

Drawings considered worthy are sent to New York for judgment in competition with those from other schools throughout the country. Drawings are the property of the school and such drawings as are needed for exhibition or other purposes will be retained.

In order to emphasize the fact that design is an art based on or conditioned by consideration of structure and the practical use and disposition of materials, some time during the intermediate design course at least one problem is carried beyond the usual presentation stage and completed in the form of scale working drawings, and one other program is carried on through the engineering design of structural elements.

The work in the drafting room outlined above is accompanied by lectures on the theory and principles of design. Included under this are such related subjects as Landscape Architecture and City Planning.

ARCH. 13 and 14—GRAPHICS.

Sophomores, first and second term, 1-4-2.5.

Descriptive Geometry, shades and shadows, perspective,—the representation of three dimensional form in what is the architect's medium of expression, two dimensional drawings.

Text: Kenison and Bradley, Descriptive Geometry. Buck, Ronan, and Oman. Lawrence's Perspective.

ARCH. 15a. HISTORY OF ARCHITECTURE (Ancient).

Juniors, first term, 3-0-2.5.

Two lectures a week are given with the aid of lantern slides, and a seminar once a week—subject, the history of architecture from early Egypt to and including ancient Rome. Research on the part of the students, both selective and assigned, supplements the classroom lectures, and illustrated reports or notes are called for from time to time.

Text: G. Holmes Perkins, Outline.

ARCH. 15b. HISTORY OF ARCHITECTURE (Medieval). Prerequisite, Arch. 15a.

Juniors, first term, 3-0-2.5.

The history of Early Christian, Byzantine, Romanesque, and Gothic Architecture.

ARCH. 15c. HISTORY OF ARCHITECTURE (Renaissance). Prerequisite, Arch. 15b.

Seniors, first term, 3-0-2.5.

The history of the Renaissance in Italy and the other principal countries of Europe.

ARCH. 15d. HISTORY OF ARCHITECTURE (American). Prerequisite, Arch. 15c.
The history of American Architecture is studied, beginning with the early settlements and tracing its development through to the present, including an analysis of the contemporary movement.

**ARCH. 22. FREEHAND DRAWING.**

Sophomores, Textile, second term, 0-3-1.

This begins with problems in freehand perspective followed by problems done in pencil with the object of developing a sense of proportion and in general, a better coordination between eye and hand.

**ARCH. 30a and 30b. CONSTRUCTION. (Building Materials.)**

Option No. 1 Juniors; Option No. 2 Sophomores, 2-0-2.

This course is devoted to the study of the materials of construction, with attention given to the effect which the nature of the material should have on design, and the best ways of using building materials in modern construction.

**ARCH. 33 and 34. BUILDING CONSTRUCTION. Prerequisite, Arch. 30a and 30b.**

Option No. 1 Seniors, first and second term, 3-3-4.

This course is devoted to the theory of building construction, deduction of formulas, the use of statics to investigate forces and stresses, and the study of the strength of materials to resist stresses. The principles studied are applied to practical building design by problems in wood, steel, and masonry construction, worked out in conference between instructor and student.


**ARCH. 46. CONSTRUCTION (Wood and Masonry). Prerequisite, Arch. 30a and 30b, and Mech. 47.**

Option No. 2. Juniors, second term, 3-0-3.

Frame, mill, and ordinary construction.

**ARCH. 47. CONSTRUCTION (Steel). Prerequisite Arch. 46.**

Option No. 2. Seniors, first term, 3-0-3.

Fireproof and non-fireproof steel construction.

**ARCH. 51 and 52. OFFICE PRACTICE. Prerequisite, Arch. 30a and 30b.**

Option No. 2. Seniors, first and second term, 2-0-2.

Writing specifications, architectural supervision, building superintendence, and estimating.

**ARCH. 70. HISTORY OF ART. Prerequisite, Arch. 15c.**

Elective; first or second term, 2-0-2.

This is a course of lectures, assisted by lantern slides, starting with the primitive manifestations of the artistic instinct, and covering in successive steps the further development of art down to modern art.

**ARCH. 71 and 72. MODELING.**

Fifth year elective, first and second terms, 1-3-2.

Modeling of architectural ornament.

**ARCH. 77 and 78. PEN AND INK DRAWING. Prerequisite, Arch. 9d.**

Elective; first and second terms, 0-4-1.5.

The drawing and rendering in pen and ink of architectural subjects. Stress is laid upon the composition of the sketch as well as its presentation. Drawings by recognized masters are studied to familiarize the student with good technique.

**ARCH. 80. PENCIL DRAWING. Prerequisite, Arch. 9d.**

Elective; first and second terms, 0-4-1.5.

Studies in various pencil media from selected examples, photographs, and outdoor subjects.

**ARCH. 81. INTRODUCTION TO LANDSCAPE ARCHITECTURE.**

(Optional) 2-0-2.

The different styles of landscape architecture and the principles governing landscape design.

Text: Hubbard and Kimball.
ARCH. 83 and 84. Water Color.
Senior, first and second term, 0-3-1.
Water color drawings are made from nature, still life objects, and architectural details.

ARCH. 109a and 109b. Life Drawing. Prerequisite, Arch. 9d.
Fifth-year students, first and second term, 0-4-1.5.
This course is devoted to practice in drawing from the living model, not only to give familiarity with the human figure but because of the value of this practice as training.

For Graduate Courses see page 167 of this catalogue.

BIOLoGY

PROFESSOR WyCKOFF, ASSISTANT PROFESSOR LowER
ASSISTANT A. E. CANNON

BIOLoGY 38. General Bacteriology.
Junior C. E., either term, 2-4-3. Fee $2.50.
The purpose of this course is that of familiarizing the student with water bacteriology and with the bacteria which are useful in sewage disposal. It is necessary that these special subjects be preceded by a study of the general characteristics and activities of bacteria. A large part of the course is, therefore, given to the study of the activities of the different groups of bacteria and the significance of these.

Text: *Elementary Bacteriology*, Greaves.

BIOLoGY 38c. General Bacteriology.
Same as Biology 38. For Co-operative students.

BIOLoGY 42. Public Health and Preventive Medicine.
Open to Juniors and Seniors, 2 hours lecture and recitation.
This course consists of the study and application of the Public Health Laws, the epidemiology and modern preventive methods of the preventable diseases.

BIOLoGY 45. General Zoology.
Sophomore, Industrial Management, first term, 3-4-4.3. Fee $3.00.
This is an introductory course in which the fundamental principles, the theories and problems of biology are presented. Attention is directed to the vital phenomena as exhibited in the lower animals with the purpose of giving the student a broader and more accurate conception of those processes at work in the higher forms of life, including man himself. In the laboratory special study is made of representatives of the various invertebrate forms.


BIOLoGY 46. Vertebrate Zoology.
Second term, 3-4-4.3. Fee $3.00.
This is a continuation of course 45. The lectures take up the development, structure, functions and relationships of the vertebrate animals together with the laws of genetics and their applications. In the laboratory representatives of the various vertebrate classes are studied.

**NOTE:** Courses No. 45 and No. 46 together fulfill the entrance requirements for Class A Medical and Dental Colleges.

**BIOLOGY 51. PHYSIOLOGY.** Prerequisites, Biology 45.
Second term, 3-0-3.
This course is designed to give the student definite information as to the structure and function of the human body, together with the conditions which may interfere with normal functioning.

**BIOLOGY 53. INDUSTRIAL HYGIENE.**
Juniors and Seniors, first term, 3-0-3.
The problems of health administration in industry. Special attention is given to industrial poisons, occupational hazards and diseases, industrial fatigue, ventilation, and accident prevention.

**BIOLOGY 171. PATHOGENIC BACTERIOLOGY.** Prerequisites, Biology 38 or 162, 2-3-3. Fee $2.50.
Open to a limited number of qualified students. A study of the characteristics of pathogenic micro-organisms and immunological reactions. The student has opportunity to isolate and identify organisms from pathological material, to study the effect of bacteria and their products on animals and to observe clinical laboratory reactions. Hours to be arranged.

**DEPARTMENT OF CERAMIC ENGINEERING**

Professor Henry; Associate Professor Vaughan; Assistant Professor Mitchell

A four year curriculum leads to the degree of Bachelor of Science in Ceramic Engineering. Graduate work leading to the Master of Science in Ceramic Engineering is also offered. The curriculum objective is to afford a broad basic training in the fundamental scientific and engineering courses, thus preparing the student to enter successfully any division of ceramic engineering. However, the necessary cultural courses are included. The class room, laboratory and library work are coordinated to combine theoretical and practical knowledge, and periodic contacts with the clay-working industries of the state enlarge the practical scope of the student.

The department also concerns itself with direct service to the ceramic industries. This takes the form of research, testing of materials and products, and manufacturing assistance. Georgia is in the center of an area which produces much of the country's supply of ceramic raw materials, and either leads or ranks high in the production of kaolin, fullers earth, ocher, manganese and limestone. In recognition of favorable market and manufacturing advantages, the department is using its facilities to encourage logical industrial development in the South.

**THE COURSE IN CERAMIC ENGINEERING**

**FRESHMAN YEAR**

See page 34

**SOPHOMORE YEAR**

**First Term**

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### Junior Year

#### First Term

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<td>*Ee. 95</td>
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<td>M. E. 43</td>
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*Military or Naval Instruction is optional for Accounting.

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<td>Cer. 38</td>
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*Military or Naval Instruction is optional for Applied Mechanics.

### Senior Year

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<td>Cer. 57</td>
<td>Whitewares Laboratory</td>
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<td>Cer. 54</td>
<td>Refractories</td>
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<td>Cer. 62</td>
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**Elective**: 3

### Electives

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<td>Cer. 120</td>
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### Courses of Instruction

**NOTE**: 3-3-4 means 3 hours class, 3 hours laboratory, 4 hours credit

**Cer. 23. Properties of Materials.** Prerequisite, Chem. 4.
Sophomore, first term, 3-0-3.

Includes a history of ceramics; service properties and technology of ceramic products; their uses and behavior in industrial service. The common ceramic materials are classified according to mineralogical character and their behavior in processing.

**Cer. 24. Processes and Tests.** Prerequisite, Cer. 23.
Sophomore, second term, 1-3-2.

Covers winning and preparation methods for ceramic materials with an elementary consideration of machines involved. The accompanying laboratory course is concerned with standard testing methods, the mathematical analysis of data, inherent errors, and practical applications to industry.

**Cer. 31. Formation of Wares.** Prerequisite, Cer. 24.
Junior, first term, 3-0-3.

Covers the mechanism of formation involved in ceramic products and machines. Dry press, stiff mud, and casting methods are included. The practical results of technical control are emphasized.

**Cer. 35. Heavy Products Laboratory.** Prerequisite, Cer. 31.
Junior, first term, 0-6-2.

The relation of laboratory and plant results, and a practical knowledge of the physical properties of materials, processes, products and machines are taught. Plant raw materials and finished products are provided, and the corresponding plants are visited upon completion of the laboratory tests.

**Cer. 36. Bodies.** Prerequisites: Chem. 13, Cer. 31.
Junior, second term, 4-0-4.

Includes the physical and chemical properties of earthy materials at all temperatures in producing ceramic products. The influences of raw material and finished product properties and specifications upon process requirements are considered. Principally concerned with whitewares, but terra cotta, refractories, heavy clay products and glass are included.
CER. 38. Calculations. Prerequisite, Cer. 31.
Junior, second term, 3-0-3.
Solutions of theoretical and practical problems involved in the manufacture of ceramic wares.

CER. 51. Drying Claywares. Prerequisites, Phys. 25, Cer. 36.
Senior, first term, 3-0-3.
Includes physics of water, air, wet raw materials and the mechanism of drying bodies. Types of driers are covered with special reference to their control characteristics.

CER. 52. Firing Claywares.
Senior, second term, 2-0-2.
Combustion behavior of gaseous, liquid and solid fuels; the mechanics of heat transfer, physical and chemical properties of clays and other raw materials under heat treatment; firing characteristics of periodic and continuous kilns.

CER. 54. Refractories.
Senior, second term, 2-0-2.
A course designed to acquaint the student with the types, properties, uses, requirements and manufacture of refractories.

CER. 55. Vitreous Ceramic Coatings.
Senior, first term, 3-0-3.
Phase relations of the important oxides and the properties of these oxides in silicious melts are studied. The fundamentals underlying methods of calculating, compounding, manufacturing and using silicate coatings on ceramic and metallurgical bodies are covered as well as the methods commonly employed to correct defects.

CER. 57. Whitewares Laboratory. Prerequisite, Cer. 36.
Senior, first term, 0-9-3.
Practical and theoretical laboratory work to determine the qualifications of molds, saggers, whitewares, slips and glazes by experiment and conclusion. Students are also encouraged to design and execute pieces and experiments in their spare time.

CER. 62. Design and Construction. Prerequisites, Dr. 27, Cer. 51.
Senior, second term, 0-6-2.
Calculations for and design of one standard unit such as a drier or kiln for specified conditions are required. In addition, one original equipment problem must be executed.
DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING

GILBERT H. BOGGS, PROFESSOR AND DIRECTOR OF THE DEPARTMENT; JOHN L. DANIEL, PROFESSOR AND CHIEF OF THE DIVISION OF CHEMISTRY; HAROLD A. BUNGER, PROFESSOR AND CHIEF OF THE DIVISION OF CHEMICAL ENGINEERING.

PROFESSORS WROTH AND TAYLOR W. S.; ASSOCIATE PROFESSOR FRIEDMAN; ASSISTANT PROFESSORS WELLS, RICHARDSON, WHITLEY, WEBER, AND GRESHAM; INSTRUCTORS WADDLE, BRANNOCK, EVERS, SPICER, AND TAYLOR, J. L.; ASSISTANTS BORDENCA, CHAPMAN, FISS, HOLDER, HOLMES, SANDERS, AND SEELIG.

The Department operates in two branches, the Division of Chemistry and the Division of Chemical Engineering.

THE DIVISION OF CHEMISTRY

Included in this Division are the courses in Chemistry required in the various engineering curricula. There is a four-year curriculum leading to the degree Bachelor of Science in Chemistry, and certain graduate courses which may be used in meeting the requirements for the Master's Degree are also offered. See page 168.

FRESHMAN YEAR

See page 34. Chemical German must be elected. If Chem. 3 and 4 are taken the record made must be above the average of the class.

CHEMISTRY AND CHEMICAL ENGINEERING 59

SOPHOMORE YEAR

First Term

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JUNIOR YEAR

(Effective 1937-38)

First Term

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Second Term

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SENIOR YEAR
(Effective 1938-39)

FIRST TERM

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SECOND TERM

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The degree, Bachelor of Science in Chemistry, will be awarded upon the completion of the above prescribed courses and twenty-eight semester hours of elective work chosen from the following list of subjects in conference with the Chief of the Division. No course will be given for less than six applicants.

ELECTIVES

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Any Course in Chemical Engineering
Any Course in Biology
Any Course in Geology
Any Course in Physics from No. 100 to No. 299
Any Course in Mathematics from No. 100 to No. 299
English 45

THE DIVISION OF CHEMICAL ENGINEERING

The degree B.S. in Chemical Engineering may be obtained upon the completion of the following curriculum, or that offered on the Co-operative Plan. (See page 79.) Courses are also described in this section which, along with those outlined in the Graduate section, may be used as credit towards the Master's degree.

FRESHMAN YEAR

See page 34. Chemical German must be elected, and if Chem. 3 and 4 are taken, the record must be above the average of the class.

SOPHOMORE YEAR

Same as for Chemistry. See page 59.

JUNIOR YEAR

FIRST TERM

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SENIOR YEAR

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<td>Ch. E. 161</td>
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Military or Naval Electives:
- Junior, first term .................................................. Ec. 21
- Junior, second term ............................................ Ec. 22
- Senior, first and second term ................................. None

Students who exercise the military option in the Junior year must take Ec. 24 as one of the Senior electives.

Ch. E. 160 will be offered to ten Seniors as an elective in the second term Senior year.

Courses of Instruction in Chemistry

NOTE: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit.

Chem. 3-4. Elementary General Chemistry.
Both courses both terms, Freshman, 4-3-4. Fee $3.00 each term.
In this course the simpler and more fundamental laws and theories of Chemistry are studied with enough descriptive matter for illustrative purposes. Parallel laboratory work exemplifies the classroom study.

Chem. 7-8. General Chemistry. Prerequisite, Entrance Chemistry and Physics.
First and second terms, Freshman, 3-3-4. Fee $3.00 each term.
A somewhat more advanced course for Freshmen who have had good preparatory courses in Chemistry and Physics.

Chem. 7c-8c. General Chemistry.
First term, Freshmen Co-op, 5-3-4.
Second term, Freshman Co-op., 4-6-3. Fee $3.00 each term.
These courses are identical with Chem. 7-8.

Chem. 13. Elementary Qualitative Analysis. Prerequisite, Chem. 4 with a minimum grade of C, or Chem. 8.
Second term, Sophomore, Cer. E. and T. E., 2-6-3. Fee $5.00.
The lectures deal with the laws and theories of analytical chemistry. The practice work includes the identification of the common positive and negative ions.

Chem. 13c. Qualitative Analysis. Prerequisite Chem. 8c.
First term, Co-operative Sophomore Ch. E. and Pre-Junior T. E., 3-9-3.3. Fee $5.00.
The lectures deal with the laws and theories of analytical chemistry and the practice work with inorganic reactions and the identifications of both positive and negative ions.

Chem. 15. The Theory of Analysis. Prerequisite, Chem. 4 with a minimum grade of B, or Chem. 8 with a minimum grade of C.
First term, Sophomore Chem. and Ch. E., 3-6-5. Fee $5.00.
This course is a classroom and laboratory study of the laws, theories and reactions of analytical chemistry with practice work in the identification of both positive and negative ions.

Chem. 17c. Quantitative Analysis. Prerequisite, Chem. 13c.
Second term, Co-operative Sophomore Ch. E., 3-9-3.3. Fee $5.00.
This course is similar to Chem. 20 but somewhat shorter.

Chem. 20. Quantitative Analysis. Prerequisite, Chem. 13 or Chem. 15.
Second term, Sophomore Chem. and Ch. E., Junior Cer. E. and Senior T. E., 3-6-5. Fee $5.00.
This course is designed to acquaint the student with the apparatus and manipulations of the analyst. The determinations will be selected to illustrate typical procedures.

First and second terms, Junior T. E., 3-3-4. Fee $6.00 each term.
The principal classes of organic compounds, aliphatic and aromatic, are studied. The laboratory work includes the preparation of typical compounds and the study of their properties.

Chem. 28-29. Organic Chemistry. Prerequisite, Chem. 4 or Chem. 8.
First and second terms, Junior Chem. and Ch. E., 3-6-5. Fee $8.00 each term.
These courses are similar to Chem. 26-27 with more extended laboratory work.

Chem. 31c-32c. Organic Chemistry. Prerequisite, Chem. 8c.
First and second terms, Co-operative Junior T. E., 4-4-3.6. Fee $6.00 each term.
Similar to Chem. 26-27 with fewer laboratory exercises.

Chem. 35c-36c. Organic Chemistry. Prerequisite, Chem. 8c.
First and second terms, Co-operative Junior Ch. E. 4-8-4.4. Fee $8.00 each term.
Similar to Chem. 28-29.
CHEM. 105. SPECIAL PROBLEMS. Prerequisite, Chem. 20 and Chem. 29.
Either term, Senior Chem.
The instruction will be individual and will include library, conference, and laboratory work. The time and fees will vary with the problem studied.

CHEM. 107-108. ADVANCED TOPICS IN CHEMISTRY. Prerequisite, Chem. 15 and Chem. 29.
First and second terms, Senior Chern., 3-0-3.
A course including industrial applications, valence, the periodic law, and the history of chemistry.

CHEM. 111. INDUSTRIAL CHEMISTRY. Prerequisite, Chem. 29.
Second term, Senior Chern. 3-0-3.
The chemistry of the Process Industries is studied, as well as the orientation of the chemist in industry.

CHEM. 114. ORGANIC ANALYSIS, QUALITATIVE AND QUANTITATIVE. Prerequisite, Chem. 20 and Chem. 29.
Second term, 1-0-4. Fee $6.00.
Ultimate analyses of organic substances are made and the methods of identification of compounds and characteristic groups are studied.

CHEM. 121. COLLOID CHEMISTRY. Prerequisite, Chem. 15.
First or second term, 3-3-4. Fee $3.00.
Lectures, recitation, and laboratory work on the preparation, properties, and practical applications of colloidal substances.

CHEM. 122. FOOD AND NUTRITION. Prerequisite, Chem. 20 and Chem. 29.
First or second term, 3-0-3.
A study of the chemistry involved in the production and distribution of foods, and in their nutritive values for man.

CHEM. 123. TOPICS IN ORGANIC CHEMISTRY. Prerequisite, Chem. 29.
First or second term, 3-0-3.
Special topics such as carbohydrates, heterocyclic compounds, isomerism and molecular rearrangements.

CHEM. 124. TOPICS IN PHYSICAL CHEMISTRY. Prerequisite, Chem. 158.
First or second term, 3-0-3.
The topics chosen depend upon the interests and needs of the students and cover such fields as chemical thermodynamics, kinetics of chemical reactions, catalysis, phase rule, and electrochemistry.

CHEM. 125. VALENCE AND STRUCTURAL CHEMISTRY. Prerequisite, Chem. 158.
First or second term, 3-0-3.
A critical discussion of the modern concept of valence and a study of the relationship between molecular structure and physical and chemical properties.

CHEM. 128. TECHNICAL ANALYSIS. Prerequisite, Chem. 20.
First term, Senior Chem., 1-9-4. Fee $5.00.
Tests and analyses of commercial products and methods used in the control of plant operations will be studied in class and laboratory. The modern instruments of the analytical chemist will be used where possible.

CHEM. 143-144. PHYSICAL CHEMISTRY. Prerequisite, Chem. 20, Phys. 25, and Math. 24.
First term, Senior Cer. E., 3-0-3.
Second term, Senior Cer. E., 4-0-4.
These are the conventional courses in physical chemistry with some stress on engineering applications and include a study of the several states of matter, chemical equilibrium and thermodynamics, velocity of reactions, heterogeneous equilibrium and the phase rule, and electromotive force.

CHEM. 146c-147c-148c. PHYSICAL CHEMISTRY. Prerequisite, Chem. 17c, Chem. 36c, and Physics 35c.
This sequence is identical in content with Chem. 147-158.
First term, Co-operative Senior Ch.E., 3-4-3. Fee $2.00.
Second term, Co-operative Senior Ch.E., 4-4-3. Fee $2.00.
Third term, Co-operative Senior Ch.E., 4-4-3. Fee $2.00.

CHEM. 147-158. PHYSICAL CHEMISTRY. Prerequisite, Chem. 20, Phys. 28, and Math. 24.
First term, Junior Chem. and Ch. E., 3-5-4. Fee $3.00.
Second term, Junior Chem. and Ch. E., 3-5-4. Fee $3.00.
The lectures in these courses are the same as in Chem. 143-144. The laboratory work includes experimental determinations of molecular weights, vapor pressure, heat of reaction, ionization, electrolysis, distillation, reaction rates, equilibrium, ion activities, electrode potentials, free energy, phase diagrams, and colloids.

For Graduate Courses see page 168 of this catalogue.
COURSES OF INSTRUCTION IN CHEMICAL ENGINEERING

Ch. E. 37c-38c. Unit Operations. Prerequisite, Ch. E. 67c.
First term, Co-operative Junior Ch. E., 2-0-1.3.
Second term, Co-operative Junior Ch. E., 4-0-2.6.
Industrial Stoichiometry and an elementary study of the Unit Operations of Chemical Engineering, with some mathematical treatment. Standard types of equipment are discussed.

Ch. E. 39c-40c. Chemical Technology. Prerequisite, Ch. E. 3Sc.
First and second terms, Co-operative Senior Ch. E., 3-0-2 each quarter.
The commercial methods for the manufacture of inorganic and organic chemicals are studied. Reports on special topics are given by the students.

First term, Co-operative Pre-Junior Ch. E., 1-4-1.3. Fee $3.00.
See course description under Ch. E. 41.

First term, Junior Ch. E., 3-3-4. Fee $3.00.
An introduction to the properties and preparation of the materials used in the construction of chemical plant equipment. Elementary physical metallurgy, heat treatment and corrosion are included in the class work, while these topics form the major portion of the laboratory course.

Ch. E. 45c. Gas and Fuels, Industrial Stoichiometry. Prerequisite, Chem 17c.
First term, Co-operative Pre-Junior Ch. E., 1-6-2. Fee $3.50.
Similar to Ch. E. 45.

Ch. E. 45. Gas and Fuels, Industrial Stoichiometry. Prerequisite, Chem. 20.
First term, Junior Ch. E., 2-6-4. Fee $3.50.
A study of the utilization of fuels, their evaluation, analysis, calorific value, as well as the examination of petroleum products and boiler water. Heat and material balances are introduced.

Ch. E. 56c. Unit Operations. Prerequisite, Mech. 39c.
First term, Co-operative Junior Ch. E., 3-3-3.6. Fee $3.00.
Same as Ch. E. 56.

CH. E. 56. Unit Operations. Prerequisite, Mech. 35.
Second term, Junior Ch. E., 3-3-4. Fee $3.00.
The types of equipment used for the Unit Operations of Chemical Engineering are discussed, the fundamental theory developed, and numerous problems solved in this connection. Problems are also given which involve the specification of equipment after consideration of the economic factors involved. The laboratory work follows the class work in actual performance tests of equipment.

CH. E. 61. Metallurgy. Prerequisite, Chem. 4 or Chem. 8.
First and second terms, Junior G. E. and Senior E. E., 2-0-2.
This course includes the elements of ore dressing, reduction, refining, the working of ferrous metals, metallography, and heat treatment.

Ch. E. 61c...Metallurgy. Prerequisite, Chem. 8c.
First term, Co-operative Pre-Junior C. E., M. E., Senior E. E., 4-0-2.6.
Same content as Ch. E. 67.

CH. E. 64c. Special Problems. Prerequisite, Ch. E. 38c.
Second term, Co-operative Senior Ch. E., 0-8-1.8. Fee $3.00.
The student is given an opportunity to develop initiative and to apply fundamental principles by doing semi-original laboratory investigation of a Chemical Engineering research nature.

Ch. E. 67. Metallurgy. Prerequisite, Chem. 4 or Chem. 8.
First and second terms, Sophomore Chem., M. E., and A. E., 3-0-3.
A study of the fundamental principles of ferrous metallurgy and metallography, and the heat treatment of steels, alloy steels, and cast iron, which furnishes the theory for a subsequent course in Heat Treatment.

Ch. E. 67c. Metallurgy. Prerequisite, Chem. 8c.
First term, Co-operative Sophomore M. E. and C. E., and Pre-Junior Ch. E., 3-0-2.
Same content as Ch. E. 67.

Ch. E. 110. Special Problems. Prerequisite, Ch. E. 161.
Second term, Senior Ch. E., 1-6-3. Fee to be arranged.
Similar to Ch. E. 64c.

Ch. E. 110c-111c. Special Problems. Prerequisite, Ch. E. 161c.
Second and third terms, Co-operative Senior Ch. E., 1-6-2. Fee will be arranged.
Same content as Ch. E. 64c extended.
CH. E. 152c. CHEMICAL ENGINEERING LABORATORY. Prerequisite, Ch. E. 38c.
Second term, Co-operative Senior Ch. E., 0-3-0.6. Fee $3.00.
Experiments illustrating the unit operations of Chemical Engineering are performed and written reports submitted by members of the class.

CH. E. 157c. UNIT OPERATIONS. Prerequisite, Ch. E. 56c.
Second term, Co-operative Junior Ch. E., 4-4-3.6. Fee $3.00.
Continuation of Ch. E. 56c.

CH. E. 157. UNIT OPERATIONS. Prerequisite, Ch. E. 56.
First term, Senior Ch. E., 3-3-4. Fee $3.00.
A continuation of Ch. E. 56.

CH. E. 160c. DESIGN OF CHEMICAL MACHINERY AND APPARATUS. Prerequisite, Ch. E. 161c.
Third term, Co-operative Senior Ch. E., 0-8-1.7.
Parallel to Ch. E. 159-160.

CH. E. 159-160. DESIGN OF CHEMICAL MACHINERY AND APPARATUS. Prerequisite, Ch. E. 157.
First and second terms, Senior Ch. E., 0-8-2.6.
Equipment for a specified purpose and capacity is designed from the student's calculations. Sketches are made which form an adequate basis for a machine drawing. Plant lay-outs are included as well as individual pieces of equipment.

CH. E. 161c-162c-163c. CHEMICAL TECHNOLOGY. Prerequisite Chem. 36c and Ch. E. 157.
First, second and third terms Co-operative Senior Ch. E., 3-0-2.
Same content as Ch. E. 161-162.

CH. E. 161-162. CHEMICAL TECHNOLOGY. Prerequisite, Chem. 29 and Ch. E. 56.
First term, Senior Ch. E., 3-0-3.
Second term Senior Ch. E. 3-0-3.
The chemical and chemical engineering principles which underlie the process industries are studied. Economic factors which have a bearing are included.

CH. E. 165. PHYSICAL METALLURGY. Prerequisite Ch. E. 41 or equivalent.
First term, Senior and Graduate Ch. E., M. E. 3-3-4. Fee $3.00.
The material discussed includes theory of heat treatment, corrosion, physical testing and allied subjects in both ferrous and non-ferrous metallurgy.
## GEORGIA SCHOOL OF TECHNOLOGY

### FRESHMAN YEAR
See page 34

### SOPHOMORE YEAR

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<td>C. E. 35</td>
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<td>C. E. 51</td>
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<td>C. E. 153</td>
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<td>C. E. 155</td>
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<td>M. E. 56</td>
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Electives:
- C. E. 61 Contracts and Specifications
- Chem. 67 Metallurgy

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### COURSES OF INSTRUCTION

**NOTE**: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit

C. E. 21, 21c, 23. **PLANE SURVEYING.** Prerequisites, Math. 17, 11c. Fee $1.00.

Sophomore A. E. and M. E., second term, 1-3-2.

Sophomore C. E., and Junior G. E., first term, 2-6-4.

Junior Cer. E. and T. E., second term, 1-3-2.

Pre-Junior C. E. and M. E. Co-op., first term, 2-4-2.2.

The construction, care and use of surveying instruments, traversing, land surveying, profile and differential leveling, computation of areas, parting of land, reduction and plotting of field notes.


For the final project a complete topographic survey is made and the notes plotted. A finished map is required of each student.

C. E. 24, 24c. **ROUTE SURVEYING**. Prerequisites, C. E. 23, 21c. Fee $1.00.
Sophomore C. E., second term, 2-6-4.
Junior C. E. Co-op., first term, 3-4-3.

Reconnaissance, preliminary, location and construction surveys for routes of all kinds, including simple, compound and reverse curves, spirals and easement curves as used on railroads and highways. Super-elevation of curves. Computations of earthwork. Construction of quantity, haul and mass diagrams.

For a final project a complete railroad location must be made and the maps finished.


C. E. 25, 25c, 26c. **CIVIL ENGINEERING DRAWING**.
Sophomore C. E., first term, 0-3-1.
Sophomore C. E., Co-op., first term, 0-6-1.3.
Sophomore C. E. Co-op., second term, 0-3-0.7.

Mapping, profile plotting, topography, plotting from field notes, titles and map lettering. For a final project a complete set of highway plans is required of each student.


Junior C. E. and G. E., second term, 3-0-3.
Junior E. E. and M. E., first term, 3-0-3.
Junior C. E. and M. E. Co-op., second term, 4-0-2.6.
Junior E. E. Co-op., second term, 4-0-2.6.

The study of the laws which govern the flow of liquids and control their behavior at rest. Hydrostatics, hydrokinetics, measurement of volumes. Applications to pipes, canals, conduits. Generation of water power.

Text: **Hydraulics**, Daugherty.

C. E. 35, 35c, 81c, 82c. **SEWERAGE AND SEWAGE TREATMENT**. Prerequisites, C. E. 33, 33c.
Junior C. E., second term, 2-0-2.
Senior C. E., Co-op., second and third term, 2-0-1.3.

A study of the design, construction and maintenance of sewerage systems and sewage disposal plants. Methods of sewage disposal.

Text: Civil Engineering Handbook, Urquhart.

C. E. 36, 38c. **ENGINEERING ECONOMICS**.
Junior C. E., second term, 2-0-2.
Pre-Junior Co-op., first term, 3-0-2.

This course is intended to give the student a foundation for the solving of the problems of economic selection. It deals with Interest, Annuities, Depreciation, Sinking Funds, Salvage, Repairs and Renewals, Annual Costs, Selection of the best machine for a given purpose, Bonds, Valuations.

Text: Mimeographed notes.

C. E. 48, 48c, 71c. **HIGHWAY ENGINEERING**.
Senior C. E., first term, 2-3-3.
Senior C. E. Co-op., second term, 3-6-3.3.

Includes the historic, economic and structural phases of highway engineering. Study of traffic census, traffic classification as related to type of highways. Methods of construction and design of highway and road types. Grades and curves, clear sight distance. Study of soils, road machinery and materials.

Text: Highway Engineering, Bateman.

The laboratory course is intended to teach the student how to test materials of construction such as cement, sand, gravel, slag, rock, etc., for the purpose of deciding whether they are suitable for use in roads, buildings or other structures. Fee $1.00.

Text: Mimeographed Notes.

C. E. 51, 51c, 85c. **WATER SUPPLY ENGINEERING**. Prerequisites, Biol. 38, 38c, C. E. 33, 33c.
Senior C. E., first term, 2-0-2.
Senior C. E., Co-op., first term, 2-0-1.3.


Text: Civil Engineering Handbook, Urquhart.

C. E. 61, 61c, 62c. **CONTRACTS AND SPECIFICATIONS**.
Senior C. E., M. E., second term, elective, 2-0-2.
Senior C. E., M. E., Co-op., third term, 3-0-2.

A course in business law for engineers and the writing of engineering specifications. A complete set of specifications, contract, proposal, advertisement, etc., is required of each student as a final project.

C. E. 63c, 164. CITY PLANNING AND GEODETIC SURVEYING. Prerequisites, C. E. 23, 21c. Fee $1.00.

Senior C. E., second term, 1-3-2.
Senior C. E. Co-op., first term, 3-3-27.
Cadestral and aerial surveys, astronomical observations, geodetic computations, city planning, airport design.

Texts: Surveying, Davis, Foote and Raynor; City Planning, Lohmann; Government bulletins.

C. E. 74. BUILDING CONSTRUCTION.
Senior Arch. E., second term, 3-3-4.
Methods of designing concrete floors, buildings, columns, beams, foundations and footings.

Text: Mimeographed Notes.

C. E. 75, 78. MATERIALS OF CONSTRUCTION.
Junior M. E., first term, 2-0-2.
Senior G. E., second term, 3-0-3.

Text: Mimeographed notes.

C. E. 86c. RESERVOIRS AND DAMS.
A continuation of 85c dealing with design of Dams, Impounding Reservoirs and Conduits.
Senior C. E., Co-op., third term 2-0-1.3.

C. E. 153, 53c, 68c, 69c. FRAMED STRUCTURES. Prerequisites, Mech. 39, 47, 47c, 48, 48c.
Senior C. E., and G. E., first term, 3-3-4.
Senior C. E. Co-op., first and second term 2-3-2.2.
A course in which is grouped the analytical and graphical determination of stresses in framed structures. The subjects covered are girders, roof and bridge trusses, wood and steel trestles, towers, viaducts and tanks.

Text: Introduction to Structural Theory, Sutherland and Bowman.

C. E. 154, 54c, 70c. REINFORCED CONCRETE. Prerequisites, C. E. 153, 53c.
Senior C. E., second term, 2-3-4.
Senior C. E. Co-op., third term, 2-3-2.2.

Text: Steel Structures, Urquhart and O'Rourke.

C. E. 155, 55c, 65c, 66c. REINFORCED CONCRETE. Prerequisites, Mech. 39, 47, 47c, 48, 48c.
Senior C. E., first term, 3-3-4.
Senior C. E. Co-op., first and second terms, 2-3-2.2.
Construction of shear and moment diagrams under intricate loadings and the practical applications to reinforced concrete. Continuous moments. Straight line design theories, fundamental formulae and the applications to beams, girders, floors, bridges, columns and buildings.

Text: Mimeographed notes.

C. E. 156, 56c, 67c. CONCRETE STRUCTURES. Prerequisites, C. E. 155, 55c.
Senior C. E., second term, 2-3-3.
Senior C. E. Co-op., third term, 2-3-2.
A continuation of C. E. 155 and 55c, devoted to the design of retaining walls, buildings, arches, floors and special structures. Each student is placed very largely on his own resources and is watched carefully and guided by his instructor to prevent him from arriving at absurdities.

Text: Mimeographed notes.

C. E. 159, 59c, 72c. HIGHWAY ECONOMICS. Prerequisites, C. E. 48, 48c.
Senior C. E., second term, 2-3-3.
Senior C. E. Co-op., third term, 3-6-3.
The economic design of highway structures, the costs of maintenance of various types of pavements, methods of financing road construction, estimates of original costs. The laboratory work is a continuation of that of C. E. 48 and 48c. Fee $1.00.

Text: Johannesson's Highway Economics.

For Graduate Courses see page 169 of this catalogue.
THE CO-OPERATIVE PLAN

COURSES IN CHEMICAL, CIVIL, ELECTRICAL, MECHANICAL, AND TEXTILE ENGINEERING

J. E. McDANIEL, DIRECTOR AND PROFESSOR OF THE CO-OPERATIVE DEPARTMENT; S. C. PUCKETTE, ASSISTANT PROFESSOR; MARY JEWETT DOYAL, SECRETARY

Since 1912 the Georgia School of Technology has offered two courses in engineering, the standard four-year course as given by other engineering colleges, and a five-year co-operative course for those students who wish to combine practical experience with technical theory.

The co-operative department originally offered only the Mechanical and Electrical courses; but from September, 1920, to the same month in 1928, the Civil, the Textile, and the Chemical courses have been added to the co-operative curriculum. They are planned to equip the students for positions in designing, production, and sales departments of industry.

Under the Co-operative Plan the students are divided into two sections: While section one is on college class work three months, section two is at work for the same length of time in the various shops in and about Atlanta. The two sections alternate or exchange places with each other every three months until the second semester of the Senior and fifth year when they merge, remaining at college continuously until graduation exercises in June. The students always remain on the jobs assigned them until the shop and college officials advance them to a higher grade of work. By the time they graduate they will have received training in practically all departments of an industry. Three weeks vacation on college time is given within a year, one week coming during the Christmas holidays, and two weeks within the month of June.

No applicant will be placed at work until he has attended classes under the co-operative plan three months. Without permission from the co-operative office no student is allowed to seek a position which another student has held; neither is he allowed to leave or change his job.

The school is at present co-operating with about one hundred and forty firms, including power companies, gas companies, railroads, machinery and mechanical equipment manufacturers, foundries, steel mills, construction and engineering firms, textile mills, electric and telephone companies. The area covered by these industries includes the city and suburbs of Atlanta, Macon, Columbus, Rome, and Savannah of Georgia; Birmingham and Montgomery of Alabama; Chattanooga and Nashville of Tennessee; and many other cities of the southeastern states.

These co-operating firms offer a wide variety of practical training and many lines of specialization. It is expected that by the end of the first year the student will have found the career in which he is most interested; the school will then use every effort to place him in the work for which he is best fitted. A high percentage of students located and trained in this way follow and succeed in their chosen profession.

The co-operative student will receive wages for his work at the prevailing rate in the particular shop in which he is employed. The school does not guarantee work nor stipulate any certain amount of compensation, but uses every effort to place students to their best financial and educational advantage. The employers pay the wages directly to the students for the actual time worked in the shops.

The average freshman should have at least $350 subject to checking account, in addition to what he will earn from his practice work. Upperclassmen should need less additional money each year as they advance in their practice field.

For co-operative students who live in cities within 300 miles of Atlanta it is obviously advantageous to work in the shops of their home town, thus reducing the cost of room and board.

Co-operative students pay slightly less tuition per year than the four-year students, since the co-operative tuition is prorated over a period of five rather than four years.

Freshmen who do not live in Atlanta are required to lodge in Cloudman Hall, the co-operative dormitory, and must pay the $7.50 rent every month in advance.

The entrance requirements for co-operative engineering courses include all specified units on page 23. Six and one-half optional units on page 24 must be selected to make a total of fifteen units. However, an applicant must be a graduate of an accredited secondary school, and must be specifically recommended by its principal. Only applicants who are in the upper third of their high school or preparatory class and who expect to graduate under the co-operative plan are accepted for this department.

Anyone interested in making application for admission into the co-operative department should write for the departmental bulletin which gives full particulars about fees, living expenses, wages paid the student while at work, discipline, school activities, etc.

Address communications to:

J. E. McDANIEL,
Director of the Co-operative Department,
Georgia School of Technology,
Atlanta, Georgia.
FRESHMAN YEAR
(Identical for all Engineering Courses)

**FIRST TERM (12 weeks)**

<table>
<thead>
<tr>
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<th>LAB.</th>
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<td>Chem. 7e</td>
<td>Inorganic Chemistry</td>
<td>5</td>
<td>3</td>
<td>4</td>
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<td>tCo-op. 1e</td>
<td>Co-ordination</td>
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<td>Dr. 9e</td>
<td>Engineering Drawing</td>
<td>9</td>
<td>2</td>
<td></td>
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<tr>
<td>Eng. 11e</td>
<td>Composition and Rhetoric</td>
<td>4</td>
<td>2.6</td>
<td></td>
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<tr>
<td>Math. 11e</td>
<td>Elementary Functions</td>
<td>5</td>
<td>1</td>
<td>3.3</td>
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<tr>
<td>Mil. 11e</td>
<td>Military Instruction</td>
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**SECOND TERM (11 weeks)**

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*Required of all first-term freshmen.

SOPHOMORE YEAR
(Identical for Civil, Electrical, Mechanical, and Textile Engineering Courses except as noted)

**FIRST TERM (12 weeks)**

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**SECOND TERM (11 weeks)**

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*Civil Engineering students have C. E. 25c, six hours a week the first term instead of Drawing 25c; C. E. 26c, three hours a week, the second term instead of Drawing 26c.

CHEMICAL ENGINEERING
The first two years of co-operative chemical engineering include the fundamental subjects which are given in all co-operative engineering courses. The three remaining years, which have principally the study of chemical engineering, prepare students for work in large chemical industries.

Unless twelve or more students elect this course it will not be given.

**COURSE OF STUDY**
For Freshman Year, see page 78

**SOPHOMORE YEAR**

**FIRST TERM (12 weeks)**

<table>
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<tr>
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**SECOND TERM (11 weeks)**

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**PRE-JUNIOR YEAR**

**FIRST TERM (12 weeks)**

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<td>Math. 32c</td>
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<td>M. L. 1c</td>
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**SECOND TERM (11 weeks)**

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<td>Mech. 39c</td>
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<td>M. L. 2c</td>
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### JUNIOR YEAR

#### First Term (12 weeks)

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<td>Ch. E. 56c</td>
<td>Unit Operations</td>
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<td>Math. 136c</td>
<td>Differential Equations</td>
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<td>Mech. 40c</td>
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<td>M. L. 3e</td>
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#### Second Term (11 weeks)

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<td>M. E. 43c</td>
<td>Thermodynamics</td>
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### SENIOR YEAR

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<td>Ch. E. 161c</td>
<td>Chemical Technology</td>
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<td>E. 24c</td>
<td>Economics</td>
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The advanced course in military, 2 credit hours per quarter for six quarters, may be taken instead of German, Economics, and Public Speaking.

### CIVIL ENGINEERING

The co-operative civil engineering course, which is practically the same as that of the four-year school, prepares its students for construction and design work of various kinds.

Unless twelve or more students elect this course it will not be given.

### COURT OF STUDY

For Freshman and Sophomore Years, see page 78

### PRE-JUNIOR YEAR

#### First Term (12 weeks)

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## ELECTRICAL ENGINEERING

The first two years of co-operative electrical engineering include principally the fundamental subjects, such as mathematics, chemistry, applied mechanics, and mechanical drawing. The last three years which have to do with some mechanical engineering subjects, but more especially with electrical subjects, prepare students for the branches of applied electricity, such as transportation engineering, power generation and transmission, the design of electrical machinery, experimental investigation, and management of public utilities.

Unless twelve or more students elect this course it will not be given.

## COURSE OF STUDY

For Freshman and Sophomore Years, see page 78

## PRE-JUNIOR YEAR

### SECOND TERM (12 weeks)

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The advanced course in military, 2 credit hours per quarter for six quarters, may be taken instead of German, Applied Electricity, and Electrical Engineering Laboratory.
### JUNIOR YEAR

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### SENIOR YEAR

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The advanced course in military, 2 credit hours per quarter for six quarters, may be taken instead of the three years German.

### THE CO-OPERATIVE PLAN

#### Mechanical Engineering

The co-operative mechanical engineering course affords broad training which may be applied successfully to various kinds of engineering.

Many students taking this course spend their first two years of practice work in welding, forge and machine shops, and their last three years in drafting rooms, pattern shops and testing departments.

Unless twelve or more students elect this course it will not be given.

#### Course of Study

For Freshman and Sophomore Years, see page 78

### Pre-Junior Year

#### Junior Year

#### First Term (12 weeks)

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</table>
## Co-operative Plan

### Textile Engineering

The co-operative textile course gives special training in carding, finishing, fabric design and analysis, weaving, and knitting. These students obtain practice work in various kinds of textile industries, such as rayon plants, cotton, woolen, and silk mills. Unless twelve or more students elect this course it will not be given.

### Course of Study

For Freshman and Sophomore Years, see page 78

### Pre-Junior Year

#### Textile Engineering

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Subject</th>
<th>1st Term (12 weeks)</th>
<th>2nd Term (11 weeks)</th>
<th>3rd Term (11 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Class</td>
<td>Lab.</td>
<td>Credit</td>
</tr>
<tr>
<td>C. E.</td>
<td>21c Surveying</td>
<td>2</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>E. E.</td>
<td>61c D. C. Machines</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Eng.</td>
<td>45c Public Speaking</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>M. E.</td>
<td>55c Industrial Organization</td>
<td>4</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>M. E.</td>
<td>66c Internal Combustion Engines</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>M. E.</td>
<td>83c Fuels Laboratory</td>
<td>6</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>M. L.</td>
<td>5c German</td>
<td>3</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>18</td>
<td>10</td>
<td>14.1</td>
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</table>

#### Second Term (11 weeks)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Subject</th>
<th>Class</th>
<th>Lab.</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. E.</td>
<td>62c A. C. Machines</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>M. E.</td>
<td>7c Foundry</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>M. E.</td>
<td>59c Seminar</td>
<td>1</td>
<td></td>
<td>.2</td>
</tr>
<tr>
<td>M. E.</td>
<td>63c Machine Design</td>
<td>6</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>M. E.</td>
<td>87c Steam and Gas Engine Laboratory</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>M. E.</td>
<td>170c Refrigeration, Heating and Ventilation</td>
<td>5</td>
<td>3.3</td>
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</tr>
<tr>
<td>M. L.</td>
<td>6c German</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Total</td>
<td></td>
<td>18</td>
<td>7</td>
<td>13.5</td>
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</table>

#### Third Term (11 weeks)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Subject</th>
<th>Class</th>
<th>Lab.</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. E.</td>
<td>62c Contracts and Specifications</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>E. E.</td>
<td>64c Electrical Engineering Laboratory</td>
<td>1</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Eng.</td>
<td>63c Technical English</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>M. E.</td>
<td>60c Seminar</td>
<td>1</td>
<td></td>
<td>.2</td>
</tr>
<tr>
<td>M. E.</td>
<td>88c Steam and Gas Engine Laboratory</td>
<td>3</td>
<td>1</td>
<td></td>
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<tr>
<td>M. E.</td>
<td>164c Machine Design</td>
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<tr>
<td>Elective</td>
<td></td>
<td>3</td>
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<td>2</td>
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<tr>
<td>Total</td>
<td></td>
<td>15</td>
<td>15</td>
<td>13.2</td>
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</tbody>
</table>

The advanced course in military, 2 credit hours per quarter for six quarters, may be taken instead of the three years German.
## GEORGIA SCHOOL OF TECHNOLOGY

### SENIOR YEAR

#### First Term (12 weeks)

<table>
<thead>
<tr>
<th>COURSE</th>
<th>NO.</th>
<th>SUBJECT</th>
<th>CLASS</th>
<th>LAB.</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. E.</td>
<td>71c</td>
<td>Applied Electricity</td>
<td>4</td>
<td></td>
<td>2.6</td>
</tr>
<tr>
<td>M. L.</td>
<td>5c</td>
<td>German</td>
<td>3</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>T. E.</td>
<td>37c</td>
<td>Jacquard Design</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>T. E.</td>
<td>53c</td>
<td>Weaving</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>T. E.</td>
<td>63c</td>
<td>Yarn Manufacturing</td>
<td>4</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>T. E.</td>
<td>83c</td>
<td>Dyeing</td>
<td>4</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>15</td>
<td>18</td>
<td>14.1</td>
</tr>
</tbody>
</table>

#### Second Term (11 weeks)

| E. E.  | 24c | Economics                              | 4     |      | 2.6    |
| E. E.  | 74c | Applied Electrical Engineering Laboratory| 4     |      | 1      |
| M. L.  | 6c  | German                                 | 3     | 2    | 2      |
| T. E.  | 64c | Yarn Manufacture                       | 4     | 6    | 4      |
| T. E.  | 84c | Dyeing                                 | 3     | 4    | 3      |
| T. E.  | 168c| Testing                                | 2     | 3    | 2      |
|        |     | Total                                  | 16    | 17   | 14.6   |

#### Third Term (11 weeks)

| M. E.  | 77c | Elementary Power Engineering           | 4     |      | 2.6    |
| T. E.  | 38c | Jacquard Design                        | 4     | 1    | 1      |
| T. E.  | 54c | Weaving                                | 4     | 1    | 1      |
| T. E.  | 81c | Knitting                               | 1     | 3    | 1.3    |
| T. E.  | 169c| Testing                                | 2     | 3    | 2      |
| T. E.  | 185c| Rayon Processing, or                   | 2     | 6    | 4      |
| T. E.  | 123c| Design and Analysis                    |       |      |        |
|        |     | Total                                  | 12    | 20   | 13.9   |

The advanced course in military, 2 credit hours per quarter for six quarters, may be taken instead of the three years German.

### THE CO-OPERATIVE PLAN

#### SPECIAL COURSE OF INSTRUCTION

**Co-ordination**

Before the freshmen are sent to work in the practical field, members of the co-operative department instruct and advise them how they should make friends with regular shop employees. Harmony and good will between the co-operative apprentices and regular shop forces are necessary for efficiency and production. Oftentimes a personal interview with a superintendent or foreman will clear up a difficulty that might be aggravated through a letter. The increase or adjustment of wages, the transfer of a student from one department to another may be accomplished only by a personal visit to the shop.

The correlation of practical work with a course of study at college can be obtained only when the shop and college officials find common interest in each other, particularly in the work of student apprentices. Personal contact arouses this interest and brings about co-ordination.
EC. 21. PRINCIPLES OF ECONOMICS.
First term, 3-0-3.

This is an introductory course covering the fundamental principles of Economics. The subject matter includes a general survey of our present economic system and a study of the principles describing its operation. This course is designed to serve as a foundation for all of the more specialized courses which follow it.

EC. 22. ECONOMIC PROBLEMS.
Second term, 3-0-3.

This is a continuation of Ec. 21, which must precede it, the general purpose being to apply the principles of economics to contemporary problems, particularly those related to industrial management and engineering. Problems of maladjustments in production, employment, distribution, money and credit and the place of the manager and engineer in economic planning are given special attention.

EC. 24. ECONOMICS FOR ENGINEERS.
First and second terms, 3-0-3.

This course is designed particularly for those students who are unable to include more than three hours of economics in their courses. It is essentially a summary of Ec. 21 and Ec. 22, except that problems related to engineering are given special emphasis. Engineering students desiring a more comprehensive course are urged to take Ec. 21 and Ec. 22.

EC. 27. PARTNERSHIP AND AGENCY.
First term, 3-0-3.

This course deals with the formation, characteristics, duration and dissolution of the partnership; the rights, powers and duties of the partners; limited partnerships and the Uniform Partnership Act.

It also includes a brief discussion of the Law of Principal and Agent.

This course deals with the formation of corporations, their management, including the issue and transfer of stock; the rights and liabilities of promoters, stockholders and directors; the proper methods of holding corporate meetings; liability of the corporation for torts and crimes; the dissolution of the corporation.

EC. 32. LAND ECONOMICS AND HOUSING.
Second term, 3-0-3.

This course is designed especially for those students who plan to enter the fields of architecture, city engineering and management, and construction. It deals chiefly with principles of city growth and structure, appraising problems, and problems of urban land utilization. Housing problems and slum clearance are given special attention. Prerequisite: Ec. 21 or Ec. 24.

EC. 33. INTRODUCTORY ACCOUNTING.
Junior, first term, 3-3-4.

This is an introductory course in bookkeeping preparatory to the course in accounting. It does not require a previous knowledge of bookkeeping. It includes the theory of debits and credits, the construction of the trial balance, the profit and loss statement, and the balance sheet. Practice is given in the use of the various types of modern books of original entry. Students who have completed a high school course in bookkeeping may substitute another course for the first term's work by securing a special permit from the head of the department.

EC. 34. PRINCIPLES OF ACCOUNTING.
Junior, second term, 3-3-4.

This course reviews briefly single proprietorship and then emphasizes accounting and co-partnerships. Each individual asset account, and liability account, on the balance sheet of a co-partnership is taken in detail in lecture and illustrated by problems in classroom and in the laboratory.

EC. 37-38. BUSINESS LAW.
Junior, first and second terms, 3-0-3.

This course is designed to acquaint the student with the economic problems resulting from such fields of business law as Contracts, Agency, Bailments, Sales, Partnership, Corporation, Negotiable Instruments, Bankruptcy and Real Property.
Ec. 41-42. THE Economics of Marketing.
Senior, first and second terms, 3-0-3.
This course deals with the location, production and assembling of raw products; with manufacturing, assembling and distributing of finished products and it presents a descriptive survey of marketing machinery. Original problems form an essential part of the course work and those problems which especially concern the engineer and manager are stressed.

Ec. 44. Principles of Investment.
Senior, second term, 3-0-3.
This course is a study of the fundamental principles of investment analysis and policy. It includes a discussion of the financial policy of corporations and gives detailed attention to various classes of public and corporate securities, investment trusts, building and loan associations, the operation of the New York Stock Exchange, underwriting, reading the financial page, and sources of information.

Ec. 45-46. Industrial Accounting.
Senior, first and second terms, 2-0-2.
This course deals with the application of cost analysis to manufacturing and distribution. Problems and exercises will be used to illustrate the methods of compiling and analyzing material, labor and manufacturing expense costs. In order to develop the student's ability to use statements as a means of executive control, considerable time will be given to the preparation and interpretation of financial statements for industrial organizations.

Ec. 48. Statistical Methods.
Senior, first or second term, 3-0-3.
This course is designed to provide the student with an elementary knowledge of statistical analysis. Emphasis is placed on the principles of gathering, summarizing, and interpreting quantitative data in the fields of economics, business and engineering.

First and second terms, 3-0-3.
The primary purpose of this course is not only to develop better and more intelligent citizenship, but particularly to have the student understand the intimate relationship between government and business. After brief consideration of the framework and functions of the branches of government, special emphasis is laid upon the regulation and promotion of business through statutes and commissions. Cases and judicial decisions are employed to show the division of constitutional authority over business between the states and the federal government.

Ec. 61. Principles of Accounting.
Junior, first term, 3-3-4.
This is a continuation of Ec. 34. Corporation accounting is illustrated by careful study in lecture and quiz sections. A practice set illustrating corporation accounting is used in the laboratory. The laboratory practice also illustrates the evolution of the holding company and the methods of accounting for the same. A single entry bookkeeping system is studied during the latter part of the course.

Ec. 62. Accounting Problems.
Junior, second term, 3-3-4.
This course consists of carefully selected problems taken from examinations set by the Certified Public Accountancy Boards in the different states, and by the American Institute of Public Accountants. They deal with single entry statements of profit and loss, single entry balance sheet construction, work sheet for adjusting a trial balance, the preparation of statements for factory operations, the opening and closing of sets of accounts for the different forms of organizations, the special problems of different corporate openings, problems involved in mergers, consolidations, promotions, holding companies, stock donations, refunding voluntary bankruptcy, statement of affairs and deficiency account, receivership, reorganization, realization and liquidation of insolvent sole proprietors, administrative accounts. In all problems the work sheets and various report forms are worked out as the case may require.

Ec. 63-64. Factory Cost Accounting.
Senior, first and second term, 3-0-3.
Lectures will be given explaining the elements of costs, principles and general methods of cost finding, direct and indirect expenses, wage systems, recording material and labor costs, and devising cost systems. The students will be required to work up a set of manufacturing cost books during the first term. During the last term they will be given problems involving the various phases of cost accounting.

Special emphasis will be given to problems relating to textile and cotton Oil Mills, lumbering and other distinctly Southern industries.

Ec. 65. Labor Problems.
Junior, first term, 3-0-3.
This course is designed to equip the student of engineering and management with a knowledge of the economics of labor problems. Four chief approaches to modern labor problems are presented: Trade Unionism, Col-
lective Bargaining, Personal Management and Labor Legislation. Special attention is given to wages, hours, working conditions, unemployment, insecurity, and to methods of industrial peace.

Ec. 66. PUBLIC FINANCE.
Junior, second term, 3-0-3.
This is a survey of the main principles and problems of public finance and taxation. Its main purpose is to familiarize the engineer and manager with public expenditures, borrowing, various forms of taxation and other types of public revenue. Special attention is given to the economics of taxation and to modern developments in the fields of national, state and local public finance.

Ec. 67. INSURANCE.
Senior, second term, 3-0-3.
This subject is treated from the viewpoint of both the policyholder and the insurance company. It involves a study of types of policies, policy contracts, principles of rate making, hazards, reserves for protection of policyholders, examination of the company to determine its safety, adjustments of losses, state regulation and fixing of rates, and the methods of organizing an insurance company or agency.

Ec. 71, 72. CORPORATE FINANCE.
Senior, first and second terms, 3-0-3.
This course treats briefly with the nature of single proprietorships and partnerships, after which follows a more extensive study of the corporation. The methods by which corporations are organized and financed and the principles that underlie corporate management are explained. The difference between what is permissible at law and what is expedient in practice will be emphasized. The course includes a study of the instruments of finance, inter-business relationships, distribution of profits, reorganizations, causes of failures and many other problems connected with the corporation.

Ec. 93. FINANCE Survey Course.
First and second terms, 3-0-3.
This course is designed to introduce the student to the main principles of money and banking and to acquaint him with the financial organization of society. It is also designed to acquaint the student with the more popular business organizations with special emphasis on the corporation. Various types of corporate securities are studied.
S.S. 19-20. THE HISTORY OF MODERN EUROPE, 1500 TO THE PRESENT.
First and second terms, 3-0-3. (Not to be taken in the same year with S.S. 11-12.)

An intensive survey of Europe from the Renaissance to the present time, with attention primarily centered upon political, social and intellectual development.

S.S. 21. THE ECONOMIC AND SOCIAL DEVELOPMENT OF ENGLAND FROM 1688 TO THE PRESENT TIME.
First term, 3-0-3.

This course will be concerned primarily with the development of English parliamentary institutions, the industrial revolution, its social and political effects in the nineteenth century, the expansion of England’s colonial empire, and her policies as a world power after 1900. The economic material of this course together with S.S. 22 is designed to furnish a historical background for courses in Economics.

S.S. 22. AMERICAN ECONOMIC HISTORY.
Second term, 3-0-3.

This course is designed to furnish a background for the study of contemporary economic problems and to supplement the economic material presented in S.S. 21. Special attention is given to the rise of the modern industrial system, the frontier and westward movement, the development of banking, the rise of complex business organizations, the labor movement, and government regulation of economic activity.

S.S. 25. HISTORY OF THE UNITED STATES.
First term, 3-0-3.

A survey of the history of the United States with special attention given to particular periods of American development. Among the subjects receiving special emphasis are: colonial society, the revolutionary period, adoption of the Constitution, Jeffersonian Democracy, the frontier, states’ rights, Jacksonian Democracy, the conflict between the states, reconstruction, urbanization, trusts, the tariff, imperialism, the World War and post-war problems.
## JUNIOR YEAR

### First Term

<table>
<thead>
<tr>
<th>COURSE NO.</th>
<th>SUBJECT</th>
<th>CLASS</th>
<th>LAB.</th>
<th>CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. E. 33</td>
<td>Hydraulics</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>E. E. 87</td>
<td>Principles of Electrical Engineering</td>
<td>5</td>
<td>5</td>
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<tr>
<td>*M. E. 48</td>
<td>Industrial Relations</td>
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<tr>
<td>Mech. 31</td>
<td>Applied Mechanics</td>
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<tr>
<td>Mech. 47</td>
<td>Mechanics of Materials</td>
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<td>Phys. 25</td>
<td>Physics</td>
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Total: 18 3 19

*Military or Naval Instruction is optional for Industrial Relations.

### Second Term

<table>
<thead>
<tr>
<th>COURSE NO.</th>
<th>SUBJECT</th>
<th>CLASS</th>
<th>LAB.</th>
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<tbody>
<tr>
<td>E. E. 16</td>
<td>E. E. Laboratory</td>
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<tr>
<td>E. E. 188</td>
<td>Alternating Current Circuits</td>
<td>5</td>
<td>5</td>
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<tr>
<td>E. C. 95</td>
<td>Cost Finding for Engineers</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Math. 136</td>
<td>Differential Equations</td>
<td>3</td>
<td>3</td>
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<tr>
<td>M. E. 43</td>
<td>Thermodynamics</td>
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<td>M. E. 45</td>
<td>Steam Laboratory</td>
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<td>3</td>
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<td>*Mech. 40</td>
<td>Applied Mechanics</td>
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Total: 17 10 19

*Military or Naval Instruction is optional for Mechanics.

## SENIOR YEAR

### First Term

<table>
<thead>
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<th>COURSE NO.</th>
<th>SUBJECT</th>
<th>CLASS</th>
<th>LAB.</th>
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<tbody>
<tr>
<td>E. E. 27</td>
<td>Seminar</td>
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<tr>
<td>*E. E. 49</td>
<td>Telephony</td>
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<tr>
<td>E. E. 117</td>
<td>E. E. Laboratory</td>
<td>1.5</td>
<td>6.5</td>
<td>2.7</td>
</tr>
<tr>
<td>E. E. 133</td>
<td>Radio Engineering</td>
<td>3</td>
<td>3</td>
<td></td>
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<tr>
<td>E. E. 189</td>
<td>A. C. Machinery</td>
<td>5</td>
<td>5</td>
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<tr>
<td>M. E. 46</td>
<td>Hydraulic and Materials Lab</td>
<td>1</td>
<td>3</td>
<td>1.3</td>
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<tr>
<td>M. E. 77</td>
<td>Power Plant Engineering</td>
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</table>

Total: 16.5 9.5 18

*Military or Naval Instruction is optional for Telephony.

### Second Term

<table>
<thead>
<tr>
<th>COURSE NO.</th>
<th>SUBJECT</th>
<th>CLASS</th>
<th>LAB.</th>
<th>CREDIT</th>
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<tr>
<td>Ch. E. 61</td>
<td>Metallurgy</td>
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<tr>
<td>E. E. 28</td>
<td>Seminar</td>
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<td>1</td>
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<tr>
<td>E. E. 118</td>
<td>E. E. Laboratory</td>
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<td>6.5</td>
<td>2.7</td>
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<td>E. E. 130</td>
<td>Transmission</td>
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<td>3</td>
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<td>E. E. 190</td>
<td>A. C. Machinery</td>
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<td>3</td>
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<tr>
<td>M. E. 62</td>
<td>Engine Laboratory</td>
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<td>1.7</td>
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**Electives | | | | |

Total: 18.4

*Military or Naval Instruction is optional for Metallurgy.

## COURSES OF INSTRUCTION

**NOTE: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit**

### E. E. 2. Applied Electricity. Prerequisite, Physics 25 (Physics 20 for T. E. Seniors.)

Senior T. E., first term, and Junior Ch. E., second term, 3-0-3.

The fundamental principles and characteristics of direct and alternating current machines.


Fee $2.50.

Senior Ch. E., first term, and Senior T. E., second term, 0-4-1.3.

The experimental determination of the characteristics of direct and alternating current machines.

### E. E. 12. Electrical Machines.

Senior Industrial Management, second term, 0-3-1.

This course is intended to familiarize the student with the construction of electrical machines and auxiliary apparatus.


Fee $4.00.

Junior E. E., second term, 1-7-2.7.

The experimental determination of the characteristics, efficiency and regulation of direct current generators and motors.

### E. E. 22c. Thermionic Valves.

Co-operative Course, Junior Signal Corps, third and fourth quarters, 2-0-1.3.

A course on the theory, operation and application of vacuum tubes as amplifiers, rectifiers, oscillators and detectors.
Co-operative Course, Senior Signal Corps, third and fourth quarters, 2-0-1.3.
The practical and theoretical consideration of receiving and transmitting circuits.

Senior E. E., first term, 1-0-1.
Co-operative course, Senior E. E., first term, 1-0-7.
A course consisting of the delivery and discussion of technical papers in class. The papers deal with subjects of timely interest in electrical engineering.

Senior E. E., second term, 1-0-1.
Co-operative course, Senior E. E., second term, 1-0-7
A continuation of E. E. 27.

Math. 33.
Co-operative course, E. E., Junior, first term, 5-0-3.3.
The principles of single-phase and polyphase alternating current circuits.

E. E. 38c. Alternating Current Machinery. Prerequisite, E. E. 37c.
Co-operative course, E. E. Junior, second term, 6-0-4.
The applications and characteristics of alternators, transformers, and synchronous motors.

Co-operative course, E. E. Senior, first term, 5-0-3.3.
The applications and characteristics of rotary converters and induction motors.

Senior A. E., first term, 3-0-3.
Some of the principles of electric and magnetic circuits, and the applications of direct current machinery.

Senior A. E., second term, 3-0-3.
The elementary principles of circuits and the applications of alternating current machinery.

Fee $2.00.
Senior A. E., second term, 0-3-1.
A course consisting of the experimental determination of the characteristics of direct and alternating current apparatus and machinery.

E. E. 45c. Electrical Engineering Laboratory. Prerequisite, E. E. 36c. Fee $3.00.
Co-operative course, E. E., Junior, first term, 1-7-1.8.
A course consisting of the experimental determination of the characteristics, efficiency, and regulation of direct current generators and motors.

E. E. 46c. Electrical Engineering Laboratory. Parallel E. E. 38c.
Prerequisite, E. E. 45c. Fee $3.00.
Co-operative course, E. E., Junior, second term, 1-7-1.8.
A continuation of E. E. 45c.

Co-operative course, E. E., Senior, first term, 1.5-6.5-1.8.
The experimental determination of the characteristics, efficiency, regulation, and losses of alternating current motors and generators.

E. E. 48c. Electrical Engineering Laboratory. Prerequisite, E. E. 47c. Fee $3.00.
Co-operative course, E. E., Senior, second term, 1.5-6.5-1.8.
A continuation of E. E. 47c; a study of thermionic rectifiers and transmission lines.

E. E. 49. Telephony. Prerequisite, E. E. 188.
Senior E. E., first term, 2-0-2.
The principles of telephone apparatus and circuits. Carrier currents, etc.

Co-operative course, E. E. Senior, second term, 2-0-1.3.
The principles of telephone apparatus and circuits. Carrier currents, etc.
E. E. 56. **The Mechanical Plant of Buildings.**
Arch. Seniors, second term, 1-0-1.
A course dealing with the fundamentals of electrical engineering as applied to modern buildings and including its application to simple problems.

E. E. 58c. **Electrical Design.** Prerequisite, E. E. 39c.
Co-operative course, E. E. Senior, second term, 1-6-1.5.
The course covers the principles of the electrical design of compound generators and alternators. Calculations are made, and characteristic curves of each machine predetermined.

E. E. 61c. **Applied Electricity.** Prerequisite, Physics 35c.
Co-operative course, M. E. Senior, first term, 3-0-2.
Some of the principles of electric and magnetic circuits, and the applications of direct current machinery.

E. E. 62c. **Applied Electricity.** Prerequisites, E. E. 61c, Math. 32c.
Co-operative course, M. E. Senior, second term, 3-0-2.
The elementary principles of alternating current circuits, and the applications of alternating current machinery.

E. E. 64c. **Electrical Engineering Laboratory.** Parallel or after E. E. 62c. Fee $3.00.
Co-operative course, M. E. Senior, third term, 1-6-2.
The experimental determination of the characteristics of direct and alternating current apparatus and machinery.

E. E. 66c. **Transmission.** Prerequisite, E. E. 37c.
Co-operative course, E. E. Senior, first term, 4-0-2.6.
A course consisting of recitations and problems devoted to the study of the operating characteristics of transmission lines, and the distribution of power.

E. E. 68c. **Seminar.** Parallel or after E. E. 38c.
A course consisting of the delivery and discussion of technical papers in class. These papers deal with subjects of timely interest in electrical engineering.

E. E. 69c. **Seminar.** Prerequisite, E. E. 38c.
Co-operative course, E. E. Senior, first term, 1-0-7.
A continuation of E. E. 68c.
E. E. 84c. Electrical Engineering Laboratory. Parallel or after E. E. 98c. Prerequisite E. E. 81c. Fee $3.00.
Co-operative course, Senior E. E., second term, 1-7-18.
A course consisting of experiments on transformers, alternators, and synchronous motors.

E. E. 85c. Electrical Engineering Laboratory. Parallel or after E. E. 97c. Prerequisite E. E. 81c. Fee $2.00.
Co-operative course, Senior E. E., third term, 1-7-18.
A course consisting of experiments on single-phase and polyphase motors, rectifiers, and transmission lines.

Junior E. E., first term, 5-0-5.
Principles of electric and magnetic circuits. The construction, characteristics, and applications of direct current generators and motors.

E. E. 91c. Electricity and Magnetism. Parallel Phys. 35c, Math. 32c.
Co-operative course, Pre-Junior E. E., first term, 4-0-2.6.
The principles of electric and magnetic circuits.

Co-operative course, Pre-Junior E. E., second term, 4-0-2.6.
The principles, characteristics, and applications of direct current machinery.

Co-operative course, Junior E. E., first term, 4-0-2.6.
The principles of single-phase and polyphase circuits.

Co-operative course, Junior E. E., second term, 4-0-2.6.
A continuation of E. E. 93c, and a study of non-harmonic waves.

E. E. 95c. Alternating Current Machinery. Prerequisite, E. E. 94c.
Co-operative course, Senior E. E., first term, 5-0-3.3.
A study of transformers and alternators.

E. E. 96c. Alternating Current Machinery. Prerequisite, E. E. 95c.
Co-operative course, Senior E. E., second term, 5-0-3.3.
A study of alternators and synchronous motors.

E. E. 97c. Alternating Current Machinery. Prerequisite, E. E. 95c.
Co-operative course, Senior E. E., third term, 5-0-3.3.
A study of induction motors and rectifiers.

Fee $4.00.
Senior E. E., first term, 1.5-6.5-2.7.
A course consisting of experiments on single-phase and three-phase circuits, and the characteristics, efficiency, and regulation of transformers and synchronous generators.

Fee $4.00.
Senior E. E., second term, 1.5-6.5-2.7.
The experimental determination of the characteristics, efficiency and regulation of polyphase and single-phase motors and rotary converters. A study of thermionic rectifiers and transmission lines.

Senior E. E., second term, 3-0-3.
Recitation and problem work devoted to the study of the construction and operating characteristics of transmission lines, and the distribution of power.

Senior E. E., first term, 3-0-3.
Co-operative course, Senior E. E., first term, 4-0-2.6.
A general course designed to cover the principles and methods of transmission and reception of sound over radio channels.

Senior E. E., second term, 3-0-3.
Co-operative course, Senior E. E., second term, 5-0-3.3.
A continuation of E. E. 133.

Senior E. E., second term, 1-5-2.
Co-operative course, Senior E. E., second term, 1-8-2.
A practical course dealing with tuned circuits, filters, transmission lines, thermionic amplifiers, oscillators, detectors, and photocells.
E. E. 188. ALTERNATING CURRENT CIRCUITS. Prerequisite, E. E. 87.
Junior E. E., second term, 5-0-5.
Single-phase and polyphase circuits, non-harmonic waves.

E. E. 189. ALTERNATING CURRENT MACHINERY. Prerequisite, E. E. 188.
Parallel E. E. 117.
Senior E. E., first term, 5-0-5.
The construction, characteristics, and applications of alternating current machinery.

E. E. 190. ALTERNATING CURRENT MACHINERY. Prerequisite, E. E. 189.
Parallel E. E. 118.
Senior E. E., second term, 3-0-3.
A continuation of E. E. 189, consisting of recitations and problems devoted to the study of the theory, construction, and operating characteristics of polyphase and single-phase motors and rotary converters.

For Graduate Courses see page 170 of this catalogue.

DEPARTMENT OF ENGINEERING DRAWING AND MECHANICS

Professor Johns; Associate Professor Weber; Assistant Professors Leech, Narmore,* Kennedy,** and Brown; Instructors Bogle and Hill

ENGINEERING DRAWING

NOTE: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit

Drawing 9 and 9c. Engineering Drawing.
Dr. 9. First term, Freshman, 0-6-2.
Dr. 9c. First term, Co-op., Freshman, 0-9-2.
Instruction is given in the proper use of drawing instruments and equipment. The course covers the theory of orthographic, isometric, and oblique projections; also a study of simple sections and methods of dimensioning. Particular emphasis is placed on the development of technique. Pencil drawings, only, are required.

Drawing 10 and 10c. Engineering Drawing.
Dr. 10. Second term, Freshman, 0-6-2. Prerequisite, Dr. 9.
Dr. 10c. Second term, Co-Op., Freshman, 0-9-2. Prerequisite, Dr. 9c.
A course covering the more intricate and advanced phases of orthographic projection and the conventions of machine drawing. Freehand working sketches are drawn of machine parts and from assemblies, followed by detail pencil drawings from which tracings are made on cloth. It is required that every student make a blue print.

Dr. 25. First term, Sophomore, A. E., M. E., 0-3-1. Prerequisite, Dr. 10.
Dr. 25c. First term, Sophomore Co-op (except C. E.), 0-3-7. Prerequisite Dr. 10c.
The fundamentals of applied descriptive geometry. Simple intersections. Elementary practical applications. Lectures, class (no outside preparation) and drafting.

** Deceased.
Drawing 26 and 26c. Engineering Drawing.
Dr. 26. Second Term Sophomore, A. E., M. E., 0-3-1. Prerequisite Dr. 25.
Dr. 26c. Second term, Co-op., Sophomore (Except C. E.), 0-6-1.3. Prerequisite, Dr. 25c.
Descriptive geometry as applied to surface intersections and space curves. Applications to structural problems. Practical layout problems in development. Approximate methods of developing double curved and warped surfaces.
Lectures, class (no outside preparation) and drafting.

ENGINEERING MECHANICS

NOTE: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit

Junior T. E., first term, 4-0-4.
Elementary statics, kinetics, and mechanics of materials.

Mech. 31. Applied Mechanics. Prerequisites, Phys. 23; Math. 23; Math. 24, or concurrently.
Junior Cer., E. E., first term, 3-0-3.
Topics of study: Kinematics of rectilinear and simple curvilinear motion; Kinetics of rectilinear motion of particles and bodies; Kinetics of plane motion; Laws of equilibrium with application to machines and structures; Symmetrical and unsymmetrical suspension of parabolic and catenary cables.

Mech. 35. Applied Mechanics. Prerequisites, Phys. 27; Math. 23; Math. 24, or concurrently.
Junior Ch. E., first term, 3-0-3. (Effective for class of '39.)
Topics of study: Resolution and composition of forces; Moments of forces; General principles of equilibrium; Physical properties of common engineering materials; Stresses and corresponding deformation of these materials in tension, compression and shear; Stresses in cylindrical and spherical vessels subjected to internal and external pressure; Analysis of stresses in simple riveted and welded joints; Torsional stresses in circular shafts.

Junior Ch. E., second term, 2-0-2.
Topics of study: Transverse shear and bending moment in beams; Centroids and moments of inertia of plane areas; Stresses in statically determinate beams; Deflections of statically determinate beams; Columns.

Mech. 39, 39c. Applied Mechanics. Prerequisites to class: Phys. 23; Math. 23; Math. 24, or concurrently. Prerequisite to lab., Dr. 10.
Junior Arch., Option No. 2, first term, 3-3-4.
Pre-Junior Co-Op., second term, 4-6-4 (Mech. 39c).
For topics of study in class see Mech. 31. (Students in Mech. 31 and in class part of Mech. 39 and 39c. are grouped together in the same class without regard to course number.)

Topics of study in lab.: Composition and resolution of forces and couples; Forces in equilibrium; Application of principles of equilibrium to determine loads on members of roof trusses, cranes, and other simple structures; Friction.

Junior Co-Op., except T. E., first term, 3-0-2. (Mech. 40c.)
Topics of study: Work, power, and energy; Impulse and momentum; The general case of rotation; Balancing of rigid bodies; The gyroscope.

Mech. 47, 47c. Mechanics of Materials. Prerequisite, Mech. 31 or 39, or concurrently.
Junior Arch., Option No. 2, second term, 2-0-2.
Pre-Junior Co-Op., C. E., M. E., second term, 3-0-2. (Mech. 47c.)
Junior Co-Op., Ch. E., E. E., M. E., first term, 3-0-2. (Mech. 47c.)
Topics of study: The physical properties of materials; Shear and bending moment; Moments of inertia; The flexure formula; Simple elastic curves; Torsion of circular shafts; An elementary treatment of columns; Cylinders with thin walls under internal pressure.

Junior Co-Op., C. E., M. E., first term, 4-0-2.6. (Mech. 48c.)
Topics of study: A more advanced treatment of elastic curves; Slope-deflection methods applied to beams; Continuous beams; Horizontal shear; Combined stresses; Moving loads; Beams of constant strength; Springs; A more advanced treatment of columns.

For Graduate Courses see page 171 of this catalogue.
DEPARTMENT OF ENGLISH

Professors Perry and Chapin; Associate Professors Folk and Walker; Assistant Professors Brown, Rainey, Cox, Ajax, and Anderson; Instructors Griffin and Patterson

COURSES OF INSTRUCTION

NOTE: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit

Comment on the Freshman English Course

At the opening of the school year all incoming Freshmen are required to take a placement test, which is given uniformly throughout all branches of the Georgia University System. On the basis of this test the Freshman are grouped into various sections according to their indicated ability.

Every student is required to have credit for two terms of Freshman English. Students notably deficient in the fundamentals of English composition may be assigned to a non-credit section; and those notably proficient may be given credit for the first term's work.

A definite number of themes is required of students during each term. No theme is accepted which is notably defective in grammar and spelling, and no student is given credit for the course until he has acquired correctness in these particulars and a reasonable facility in the use of the English language. If the student fails to receive credit for the course, he will be required to repeat the work—at least in part—as often as may be necessary to teach him to write correctly.

The schedule of each student provides for a consultation hour with his instructor.

Students in more advanced classes whose work in composition is unsatisfactory may be required to take this course, as a whole or in part, even though they have credit for the course. A "Laboratory Section" in English composition is conducted to meet the needs of such students.

ENGLISH 11. Composition and Rhetoric.
Required of all Freshmen, first term, 3-0-3.

The course offers a study of the basic principles of rhetoric and composition, including punctuation, grammatical form, the correct and effective use of words, and the structure of the sentence and the paragraph. The emphasis is placed on the application of these principles in the student's themes.

Text: Jones' Practice Handbook in English; An approved dictionary.

ENGLISH 12. Composition and Rhetoric. Prerequisite, English 11.
Required of all Freshmen, second term, 3-0-3.

The course is a continuation of English 11. Its main concern is with the larger units of composition, the paragraph and the theme as a whole, with special emphasis on the collecting and organizing of material for the expository essay.


FRESHMAN COLLATERAL READING

All Freshmen are required to read each term, as an integral part of their Freshman English course, a designated amount of collateral reading. This collateral reading will be approximately one thousand pages, one-third of which must be non-fiction. The books selected by the student for reading must have the approval of the instructor. The books are, in the main, supplied by the School Library. The larger book collection of the Carnegie Library of Atlanta is also made available for the use of all Tech students.

SURVEY OF THE HUMANITIES

In lieu of a study of literature during the Sophomore year there is given the Survey Course in the Humanities which is a uniform part of the curriculum of all units of the University System of Georgia. This course attempts to follow the development of the arts through the ages, beginning with the earliest times. The basic text is a Syllabus in Two Parts prepared by various faculty members of the University System, together with an anthology.

ENGLISH 33. Survey of the Humanities. Prerequisite, English 11 and 12.

Required of all Sophomores, first term, 3-0-3.

The course presents a general survey of the Humanities from the earliest times to the close of the Renaissance. It is conducted by means of lectures, oral and written quizzes, and written reports.

ENGLISH 34. SURVEY OF THE HUMANITIES. Prerequisite, English 33. Required of all Sophomores, second term, 3-0-3.

The course continues the survey of the Humanities from the close of the Renaissance to the present. It is similar in aim and scope to English 33.

Texts: Survey of the Humanities, Vol. II; World Literature, Cross. Collateral reading, required in both English 33 and 34, will be announced by the instructor.

ENGLISH 41.* AMERICAN LITERATURE. Prerequisite, English 11 and 12. Juniors and Seniors, first term, 3-0-3.

The course presents a general survey of American literature from the beginning to the Civil War.


ENGLISH 42.* AMERICAN LITERATURE. Prerequisite, English 41.

Juniors and Seniors, second term, 3-0-3.

The course continues the survey of American literature, from the Civil War to the present.


ENGLISH 45. PUBLIC SPEAKING.

Juniors and Seniors, one term, 3-0-3.

This brief course attempts to inform the student of the principles underlying effective informal public speaking and to furnish him with some experience and practice in the art.

Text: To be announced.

ENGLISH 50.* ENGLISH POETRY.

Juniors and Seniors, one term, 3-0-3.

This course is designed to heighten the student's appreciation of poetry by means of study of the basic techniques of the art and of the principal poetic forms and by readings in good English poetry.

Text: To be announced. Not given 1936-37.

Juniors and Seniors, one term, 3-0-3.

ENGLISH 51. MODERN DRAMA.

This course presents a brief study of dramatic theory and technique, illustrated by the work of a number of modern playwrights. The class study is supplemented by collateral readings in modern drama.

Text: To be announced.

*Taught in extension.
THE GENERAL ENGINEERING COURSE

Professor D. P. Savant, Director

The degree of Bachelor of Science in General Engineering is awarded on the completion of this course.

This course has been established for students who wish to secure a training in engineering principles and their application, but who do not desire to specialize in any particular branch of engineering. In the last year a student may choose one of the two options offered.

Concerning Option No. 2, see Aeronautical Engineering, page 32.

FRESHMAN YEAR
See page 34

SOPHOMORE YEAR
First Term

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Second Term

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JUNIOR YEAR
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Senior Year
Option No. 1
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Second Term

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Senior Year
Option No. 2
First Term

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<td>M. E. 155</td>
<td>Industrial Organization (Military Elective)</td>
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Total: 15 12 18.3
The work of the department of Geology is designed to give the student a thorough grounding in the basic principles of Geology and Mineralogy and their application to the particular field of engineering the student is preparing to enter. The department has type collections for Mineralogy and Geology; a collection of building stones and ceramic clays; maps, charts and folios; and the usual Mineralogy laboratory equipment.

**COURSES OF INSTRUCTION**

**NOTE:** 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit.

**GEOL. 36c.** **Engineering Geology.** Prerequisites, Chem. 3, 4; Phys. 23, 24; C. E. 21 or 23.

Pre-Junior C. E. Co-operative students, second term, 3-3-2.7.
A course in general, structural, and economic geology.

**GEOL. 41, 42.** **General Geology.** Prerequisites, Chem. 3, 4; Phys. 23 and 24; C. E. 21 or 23.

41, Juniors in C. E., Cer. and Gen. Sc., first term, 3-0-3.
A somewhat detailed account of geologic processes.
42, Juniors in Chem. and Gen. Sc., second term, 3-0-3.
A course of recitations and lectures in Historical Geology.

**GEOL. 44.** **General Geology Laboratory.** Prerequisite, Geol. 41.
Junior Cer., second term, 0-3-1.
A laboratory course in General Geology with some map interpretation. Various field trips are taken during the term.

**GEOL. 46.** **General Geology.** Prerequisite, Geol. 41.
Juniors in C. E., second term, 3-3-4.
A course in Historical Geology and Map Reading.

**GEOL. 51.** **Mineralogy.** Prerequisites, Geol. 41, 42, 44.
Seniors in C. E., Cer. and Chem., first term, 1-3-2.
A course in descriptive and determinative mineralogy which includes an introduction to crystallography, blow-piping, and the determination of important minerals and rocks by their chemical and physical properties.

**Geol. 101. Advanced Mineralogy.**
Crystallography stressed. 1-6-3.

**Geol. 103. Paleontology.**
Invertebrates. 3-0-3.

**Geol. 104. Paleontology.**
Vertebrates. 3-0-3.

**Geol. 105. Field Geology.**
Theory. 3-0-3.

**Geol. 106. Field Geology.**
Practice. 1-6-3.

**Geol. 109. Structural Geology.**
Lectures on Earth Structures.

**Geol. 116. Petrography.**
Determinations and classification by microscopy. 1-6-3.

**Geol. 125. Hydrology.**
Underground waters. 3-0-3.

**Geol. 132. Economic Geology.** 3-0-3. A Geological and Economic study of all commercially valuable minerals and rocks.
Text: Tarr's *Economic Geology.*

---

**INDUSTRIAL MANAGEMENT**

*Professor W. V. Dunkin, Director*

This course, which leads to the degree, Bachelor of Science, provides adequate training for those students who intend to do executive work in industry. The first two years lay the foundation for a liberal education, with English, History, Social Science, Biology, and the basic physical sciences. Mathematical training is given which enables the student to master the important work in Finance, Accounting, and Statistics given in the Junior and Senior years. Unusually strong courses are given in Economics, Business Law, Distribution of Products, and Industrial Organization.

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**INDUSTRIAL MANAGEMENT**

**FRESHMAN YEAR**

**FIRST TERM**

<table>
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**SECOND TERM**

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# INDUSTRIAL MANAGEMENT

## SOPHOMORE YEAR

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<td>Ec. 37</td>
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Total: 14 6 18

## SENIOR YEAR

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<td>Ec. 45</td>
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<td>Ec. 93</td>
<td>Corporation Finance</td>
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<td>M. E. 8</td>
<td>Foundry and Welding</td>
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<td>M. E. 48</td>
<td>Industrial Relations</td>
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<td>E. E. 12</td>
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<td>M. E. 154</td>
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Total: 14 3 18

Electives may be chosen, subject to required prerequisites, and approval of the director. Six hours of Advanced Military may be taken as elective work.
DEPARTMENT OF MATHEMATICS

Professors Smith, Field, Skiles, and Hefner; Associate Professors Stamy and Fulmer; Assistant Professors Mundorff, Reynolds, Ballou, and Steen; Instructors Hook, Starrett, Sears, Sewell, Webb, and Coleman

COURSES OF INSTRUCTION

NOTE: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit

Math. 3. Entrance Algebra. Freshman, first term, six hours per week.
A non-credit course for students who are not prepared to take Math. 17.
Text: Rosenbach and Whitman, College Algebra.

Math. 11. Advanced Algebra. Prerequisite, Entrance Mathematics.
First year Co-operative course, first and second quarters, 5-0-3.3.
This course begins with a review of factoring, fractions, simplification, quadratics, and includes the usual study of Theory of Equations, Logarithms and Slide Rule.
Text: Rosenbach and Whitman, College Algebra.

Math. 12. Trigonometry. Prerequisite, Math. 11.
First year Co-operative course, third and fourth quarters, 6-0-4.
This course covers the Trigonometry as taught in Math. 17 and includes further use of the Slide Rule.
Text: Palmer and Leigh, Trigonometry.

Second year Co-operative course, first and second quarters, 6-0-4.
The course includes the analytic geometry of point, line and circle, elementary properties of conic sections, transformations of co-ordinates, polar and rectangular graphs, transcendental curves useful in engineering and parametric representation.
Text: Sisam, Analytic Geometry.

Freshman, first term, 5-1-5.
The course begins with a review of selected topics in algebra and includes functions and graphs, advanced quadratics, variation, binomial theorem, complex numbers and elementary theory of equations. In trigonometry it covers the standard course. The function concept is stressed as a means of unifying the theory, and the problems used are, to a large extent, those of frequent occurrence in actual engineering work.
Text: Rosenbach and Whitman, College Algebra; Palmer and Leigh, Trigonometry.

Freshman, second term, 5-1-5.
The course includes the analytic geometry of point, line and circle, transformation of co-ordinates, polar and rectangular graphs of transcendental curves useful in engineering, conic sections, and the elements of solid analytic geometry.
Text: Sisam, Analytic Geometry.

Sophomore, Industrial Management, first term, 3-0-3.
The course includes short methods of computation, simple and compound interest, equated date, compound discount, annuities, amortization, depreciation, valuation and yield of bonds, and building and loan associations. Special attention is given to practical problems of frequent occurrence in actual business transactions.
Text: Rietz, Crathorne and Rietz, Mathematics of Finance.

Sophomore, first term, 5-0-5.
The course includes derivatives of algebraic and transcendental functions, simple applications of the derivative and differential, maxima and minima, rates, curvature, series, Newton's method, the definite integral, and its application to plane areas and volumes of revolution.
Text: Granville, Smith & Longley, Calculus.
MATH. 24. INTEGRAL CALCULUS. Prerequisite, Math. 23.
Sophomore, second term, 5-0-5.
This course is a continuation of Math. 23. It includes methods of integration, exact and approximate; the application of single and iterated integrals to lengths, areas, surfaces of revolution, volumes, pressure, work, center of pressure, center of gravity and moments of inertia; partial and total derivatives with application to geometry and rate problems.
Text: Granville, Smith & Longley, *Calculus*.

MATH. 31. DIFFERENTIAL CALCULUS. Prerequisite, Math. 13.
Second year Co-operative course, third and fourth quarters, 5-0-3.3.
The course includes derivatives of algebraic and transcendental functions and applications to slopes, maxima and minima, rates, curvature, and indeterminate forms.
Text: Granville, Smith & Longley, *Calculus*.

MATH. 32. DIFFERENTIAL AND INTEGRAL CALCULUS. Prerequisite, Math. 31.
Third year Co-operative course, first and second quarters, 5-0-3.3.
This course is a continuation of Math. 31 and includes space geometry, series, partial differentiation and integration of standard forms.
Text: Granville, Smith & Longley, *Calculus*.

MATH. 33. INTEGRAL CALCULUS. Prerequisite, Math. 32.
Third year Co-operative course, third and fourth quarters, 5-0-3.3.
This course completes the study of integration as begun in Math. 32 and includes applications to areas, lengths, surfaces, volumes, pressure, work, center of gravity and moments of inertia.
Text: Granville, Smith & Longley, *Calculus*.

MATH. 136. DIFFERENTIAL EQUATIONS. Prerequisite, Math. 24.
Junior A. E., E. E., and Ch., 3-0-3.
Ordinary Differential Equations of first and second orders and special types of higher order. Numerous applications to Physics and Mechanics are given.
Text: Cohen, *Differential Equations*.

MATH. 136c. DIFFERENTIAL EQUATIONS. Prerequisite, Math. 33.
Fourth year Co-operative course, first and second quarters, 4-0-2.6.
The course includes Ordinary Differential Equations of first and second orders and special types of higher order. Applications to Physics and Mechanics are given. Required for students in Electrical and Chemical Engineering.
Text: Cohen, *Differential Equations*.
For graduate courses, see page 172.
DEPARTMENT OF MECHANICAL ENGINEERING

Professors King, Dunkin, Mason, Howell and Sweigert; Associate Professors Trotter, Holland and Matson; Assistant Professors Hinton and Harrelson; Instructors Case, Martindale, Henika, Van Houten, Norman, Topham, and Foster; Graduate Instructors Bevis, Felton, Grommet and Salters; Student Instructors Bean, Campbell, Corley, and Wilcox.

Mechanical Engineering entails hard work, physical and mental, and demands from the successful engineer native ability, technical training, determination, and willingness to take responsibility. Its courses of study are not designed to cover the entire field of technical thought and achievement, but to impress basic principles upon the student and train his mind to assimilate new ideas and draw correct conclusions from given facts.

From the standpoint of theory the course in Mechanical Engineering offers a thorough training in mechanics and heat engineering with emphasis on the underlying mathematics and physics. On the practical side the shops and laboratories provide direct knowledge of the construction and use of modern tools, machines and mechanical devices, together with training in applying this knowledge to actual engineering conditions.

Two alternative courses are offered in Mechanical Engineering. The course in the first three years is identical for the two options, but the first term of the senior year the student chooses General Mechanical Engineering, or Industrial Management. Both options lead to the Degree of Bachelor of Science in Mechanical Engineering.

1. General Mechanical Engineering Option.

This option gives the student a thorough training in the fundamentals of Mechanical Engineering, embracing Electrical Engineering, Power Plant Engineering, Machine Design, and advanced Shop Work. This option prepares the student for taking up any line of work in the mechanical engineering field.

2. Industrial Engineering Option.

This option gives the fundamental work in Mechanical Engineering and the principles of industrial organization, which will fit the student for entering the executive field of the industries.

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### Mechanical Engineering

**Second Term**

<table>
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### Senior Year

#### General Option

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<td>M. E. 169</td>
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**Second Term**

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<td>Eng. 45</td>
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<td>M. E. 60</td>
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<td>Ref., Heat., and Vent. Lab.</td>
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**Mechanical Engineering**

### Industrial Engineering Option

**First Term**

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**Second Term**

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SENIOR
(Effective 1938-39)

INDUSTRIAL ENGINEERING OPTION

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SECOND TERM

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ELECTIVES

The following courses are elective for both Industrial and General Options in Mechanical Engineering. No course will be given to less than eight men. Any Graduate Course may be elected either term.

FIRST TERM

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<td>Ec. 94</td>
<td>Survey Course in Business</td>
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<td>M. E. 49</td>
<td>Mechanical Engineering Special Problems</td>
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<td>M. E. 172</td>
<td>Steam Turbines</td>
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<td>M. E. 95</td>
<td>Mechanical Engineering Laboratory</td>
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<td>Math. 136</td>
<td>Differential Equations</td>
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<tr>
<td>Ec. 21</td>
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M. E. 7 AND M. E. 7c. FOUNDRY LABORATORY.
Junior M. E., second term, 0-3-1.
Senior M. E. Co-op., second term, 0-4-1.

This course in foundry practice consists of the elements of bench and floor work, with projects in simple mould building, in which two and three part flasks are used. Machine and other methods of mass production are put through with moulding machines, core presses and other equipment, mixing and pouring non-ferrous metals, such as brass and aluminum. Computation of charges, and operation of the cupola and brass furnaces are also taught.

M. E. 8. FOUNDRY AND WELDING LABORATORY.
Elective, either term.
Senior, I. M., first term, 0-3-1.
One-half of the term is spent in the foundry and one-half of the term in welding laboratory. This course is intended to give the student a survey of foundry practice, electric and oxy-acetylene welding, and is taught by means of lectures as well as practice work.

M. E. 10 AND M. E. 10c. WELDING LABORATORY.
Sophomore C. E., first term, 0-3-1.
Junior, C. E., Co-op., second term, 0-3-0.7.
Junior, E. E. Co-op., second term, 0-3-0.7.
Junior, M. E. Co-op., second term, 0-3-0.7.
In this course is given a brief survey of the whole field of welding practice, including the fundamentals of electric arc and resistance, oxy-acetylene, forge, thermit, and atomic hydrogen arc welding.
By actual practice, the student is taught to use the oxy-acetylene torch, the electric arc and the electric resistance spot welding equipment.

M. E. 10b. ADVANCED WELDING.
Elective, 1-3-2.
This course may be substituted by the student for M. E. 10, if he desires the added information.
This course furnishes instruction by means of lectures and laboratory practice, which enables the student to select proper material, apparatus and procedure to be able to perform, inspect and supervise welding operations which have come to occupy such an important place in the fabrication of machines and apparatus used in engineering. Lantern slides are used to show the crystalline structure and the effects of heat upon the various metals as a result of the various procedures in use.

M. E. 14. MACHINE LABORATORY.
Sophomore E. E., second term, 0-3-1.
One hour of this course is devoted to the classroom where modern production methods are taught by actual demonstration. The subject of jigs, tools and fixtures used in electrical manufacturing plants are studied. The laboratory work consists wholly of electrical work in motor building.

M. E. 15. MACHINE LABORATORY.
Junior T. E., first term, 0-6-2.
One hour of this course is devoted to the classroom where modern production methods are taught by actual demonstration. The projects selected for this work are those which carry most of the fundamental shop operations met by the Textile Engineer in mill maintenance, such as gear and cam production.

M. E. 16 AND M. E. 16c. MACHINE LABORATORY.
Sophomore A. E., M. E., first or second term, 0-6-2.
Junior M. E. Co-op., second term, 2-6-1.6.
Two hours of this course are spent in the classroom in a study of the production problems that occur in modern manufacturing plants. Time study and the design of jigs, tools and fixtures are required.
The practical work consists of projects selected for their training value. The use of simple jigs, tools and fixtures are employed throughout the course. The sequence of operation and tools used for such operations are furnished the student with standard time in which such operations should be completed.

M. E. 17. MACHINE LABORATORY. Prerequisite, M. E. 16.
Junior M. E., first term, 0-3-1.
One hour of time in this course is spent in the classroom on manufacturing methods, with special emphasis being given to various types of gears and cam production.
The students are allowed to select various objects that will carry out production theory in machine work.
The class is divided into groups of workmen, each having a foreman selected from members of the class. Each foreman serves a period of four weeks.
Each workman is furnished a complete schedule of operations, upon which is placed the standard time for such operations, with tools used for each operation. In the lecture and demonstration work, a study is made of cutting speeds and feeds on each part by simple and multiple methods which includes milling, gear cutting, cam cutting, cylindrical grinding, internal grinding and the use of the boring mills.
Elective, first or second term, 0-3-1.
Continuation of M. E. 17.

M. E. 22, M. E. 22c. Heat Treating and Welding Laboratory. Prerequisite, E. Ch. 67. Fee $10.00.
Junior M. E., second term, 1-6-3.
Pre-Junior M. E., Co-op., second term, 1-6-2.
This course presents the principles and practice related to working, heat treating and welding of steels, the steel making process and the classification of steels.
The topics are discussed fully by means of lectures and demonstrations, assisted by lantern slides. The laboratory work is taught by actual practice in the use of oxy-acetylene torch, electric arc, resistance spot welder, the forge, gas furnace, electric furnace, polishing and micro-photographic equipment. Physical tests are made upon welded joints before and after heat treating.

II. M., elective, either term, 2-0-2.
This course presents to the student the various types of tools which are used in manufacturing processes, their application, care and maintenance. Tool materials, cutting speeds and general shop practice are taught with the purpose of familiarizing the student with the most modern methods of manufacture. Inspection trips are made of manufacturing plants using both old and modern methods of production.

Elective first term or second term.
This course includes the actual construction of a project which will involve the fundamental principles of cabinet making, together with finishing. The use of lacquers and other finishes, by means of the spray gun, and brush work is taught.

M. E. 37, M. E. 37-c. Kinematics of Mechanism. Prerequisites, Dr. 27 and 28 and Mech. 39 parallel.
Junior A. E., T. E., second term, 2-3-3.
Junior M. E., T. E. Co-op., first term, 3-4-3.
This course includes an analysis of the motions and forces occurring in gearing, cams, belts, chains and linkages, and the graphical determination of the velocities, accelerations and relative motions in these mechanisms.

Text: 1936-37 Keown and Faires, Mechanism.
Junior M. E., first term, 3-0-3.
Pre-Junior M. E. Co-op., second term, 3-0-2.
This course embraces a study of engineering thermodynamics. The fundamental laws are developed and the properties of fluids are studied.

Junior M. E. Co-op., first term, 4-0-2.6.
See M. E. 140 for course description.

Senior T. E., first term, 2-0-2.
Junior E. Ch. and T. E., Co-op., second term, 3-0-2.
Pre-Junior E. E., Co-op., second term, 3-0-2.
This brief course in Thermodynamics develops the fundamental laws of gases and vapors and lays a groundwork for the analysis of gas and vapor engine cycles, flow of fluids and heat transfer.
Text: 1936-37, Young and Young, Elementary Engineering Thermodynamics.
Junior A. E., second term, 3-0-3.
Junior E. Ch., second term, 3-0-3.
Junior C. E., second term, 3-0-3.
Junior C. E., Co-op., first term, 4-0-2.6.
This course includes the fundamentals of engineering thermodynamics. The development of equations for transformation of energy of gases and vapors is studied.
M. E. 45, 45-c. Elementary Steam Laboratory. Prerequisite or parallel, either M. E. 41, 41-c, 43, 43-c, or 44. Fee $1.75.

Junior M. E., Senior Ch. E., and T. E., first term, 1-3-1.3.
Senior E. E., first term, 1-3-1.3.
Junior A. E., second term, 1-3-1.3.
Junior Gen. Eng., first term, 1-3-1.3.
Junior C. E., and M. E., Co-ops., first term, 1-3-1.
Junior E. E. and Ch. E., Co-ops., second term, 1-3-1.
Junior T. E., Co-op., second term, 1-3-1.

This course includes steam calorimetry, economy test of a steam engine, the calibration of instruments, and the testing of lubricating oils.

M. E. 46, M. E. 46-c. Hydraulics and Materials Laboratory. Prerequisites, Mech. 47, 48 or Mech. 47c, 48-c, or parallel and C. E. 33 or 33-c. Fee $2.00.

Junior M. E., Co-op., second term, 1-3-1.
Senior E. E., first term, 1-3-1.3.
Senior Gen. Eng., second term, 1-3-1.3.
Senior E. E., Co-op., third term, 1-3-1.
Senior A. E., second term, 1-3-1.3.

The work covered in this course embraces the testing and calibration of orifices, nozzles, weirs, water meters, water wheels, centrifugal pump, etc., and the testing of materials in tension, compression, cross bending, torsion and shear.


Junior M. E., Co-op., second term, 1-3-1.
Junior M. E., second term, 1-3-1.3.
Junior M. E., Co-op., second term, 1-3-1.

The work in this course includes the tests of apparatus used as auxiliary devices such as pumps, orifices, nozzles, weirs, and water wheels, and the determination of the analyses and heating values of various types of solid, liquid and gaseous fuels.

M. E. 48, 48c. Industrial Relations. Prerequisite, Junior standing.

Senior M. E., Co-ops., second term, 3-0-2.
See M. E. 148 for course description.


Senior M. E., first and second term, or either for one term, elective, credit 1, 2 or 3 hours.
Senior M. E. Co-op., first and second term, or either for one term, elective, credit 1, 2 or 3 hours.
Believing that the student branch of the national engineering society known as the American Society of Mechanical Engineers should have an opportunity to meet at a regular scheduled period, two hours per month are set aside for their use. Members hold their meetings under the direction of their own officers. Students who are not members of the student branch are required to attend the regular seminar recitation. This student organization has been active for a number of years and was among the first student branches organized by the parent society.

M. E. 61. Organization and Management of Industrial Concerns. Prerequisite, Ec. 22.
Junior I. M., first term, 3-0-3.
A survey course giving a comprehensive picture of industrial and business life at the present. Topics considered: Nature of Business Management; Financial Management; Office Management; Marketing Management; Production Management; Personnel Management.

Senior E. E., second term, 1-4-1.6.
Senior E. E. Co-op., second term, 1-7-2.
The work in this course includes the testing of steam engines and turbines, internal combustion engines, air machinery, boilers and refrigeration equipment.

Senior M. E. Co-op., second term, 6-0-4.
See M. E. 163 for course description.

Senior M. E., Co-op., third term, 4-6-4.
See M. E. 164 for course description.

Junior M. E., second term, 4-0-4.
Junior M. E. Co-op., second term, 5-0-3.3.
This course embraces a study of fuels and combustion, steam boilers, furnaces, stokers, superheaters, coal and ash handling apparatus, chimneys, mechanical draft, steam engines and turbines, condensers, feed water purifiers and heaters, pumps, and cost of power.
Text: 1936-37, Butterfield, Jennings and Luce, Steam and Gas Engineering.

Senior M. E. Co-op., first term, 3-0-2.
See M. E. 166 for course description.

Senior Arch., first term, 2-0-2.
A study of the principles of heating, ventilating, and plumbing, with the application to special problems.

M. E. 73. Heat Engineering. Prerequisites, Phys. 27 and 28.
Junior Chem. E., second term, 4-3-5.
This course will embrace the fundamentals of engineering thermodynamics, heat engines and power plants, with laboratory work parallel with the classroom instruction.

M. E. 77, M. E. 77-c. Elementary Steam Power Engineering. Prerequisites, M. E. 43, M. E. 43-c or M. E. 44.
Senior C. E., T. E., second term, 3-0-3.
Junior C. E., Co-op., second term, 4-0-2.6.
Senior T. E. Co-op., third term, 4-0-2.6.
Senior E. Ch., Co-op., second term, 4-0-2.6.
Senior E. E., Co-op., first term, 4-0-2.6.
This course covers the study of fuels and combustion, steam boilers, smoke prevention, furnaces, stokers, superheaters, coal and ash handling machinery, chimneys, mechanical draft, steam engines and steam turbines, finance and economics of power plants and the cost of power.
Texts: 1936-37, Butterfield, Jennings and Luce, Steam and Gas Engineering.

Senior M. E. Co-op., third term, elective 3-0-2.
See M. E. 182 for course description.

M. E. 83, 83-c. Heat Engine and Materials Laboratory. Prerequisites, M. E. 140 or 42c, M. E. 65 or 65-c, M. E. 45 or 45-c. Fee M. E. 83, $2.50; M. E. 83-c, $1.50.
Senior M. E., first term, 0-4-1.3.
Senior M. E. Co-op, first term, 0-6-1.3.
This course includes strength of materials, steam pumps, steam turbines, air meters, air compressors, complete tests of internal combustion engines, and a complete test of some power plant in the City of Atlanta.
M. E. 84. Refrigeration, Heating and Ventilation Laboratory. Prerequisites, M. E. 45, M. E. 140. Fee $2.00.
Senior M. E., second term, 0-4-1.3.
The work in this course includes testing of fans, unit heaters, and work on air conditioning and refrigeration, and pipe friction.
Senior M. E. Co-op., first term, elective, 3-0-2.
See M. E. 186 for course description.
Senior M. E., Co-op., second term, 0-4-1.
See M. E. 84 for course description.
Senior M. E., Co-op., third term, 0-4-1.
See M. E. 84 for course description.
M. E. 89. Internal Combustion Engine Laboratory. Prerequisites, M. E. 166. Fee $2.25.
Senior elective, first term, 0-3-1.
This course involves a study of the effect on power output and economy with varying engine temperatures, pressures, air-fuel ratios, etc.
M. E. 94. Aeronautical Engine Laboratory. Parallel M. E. 186. Fee $2.25.
Senior A. E., second term, 0-3-1.
The work in this course includes economy and power tests on in-line and radial type engines, and analysis of liquid fuels.
M. E. 95, 95-c. Special Mechanical Engineering Laboratory. Fee $2.00.
Senior M. E. Elective, 0-9-3.
Senior M. E. Co-op., Elective, 0-9-2.
The work in this course consists of special laboratory problems pertaining to the student's course and selected with the approval of the department. The purpose is to give the student an opportunity to analyze and effect a solution to a problem as an individual and not as a member of a group.
M. E. 96. Special Mechanical Engineering Laboratory. Fee $2.00.
Senior M. E. Elective, second term, 0-9-3.
A continuation of the work in M. E. 95.
M. E. 154. INDUSTRIAL MANAGEMENT. Prerequisite M. E. 152.
Senior I. M., second term, 3-0-3.
Problems of Managerial Control. A continuation of M. E. 152.

M. E. 155. ORGANIZATION AND MANAGEMENT. Prerequisite, junior standing.
Senior M. E., first term, 3-0-3.
A course in the principles of factory organization and management. The type of industrial organization, fundamental considerations involving production control, purchasing, production, accounting, employment and executive control, are some of the important topics studied.
Text: 1936-37, Kimball, Principles of Industrial Organization.

M. E. 156. ENGINEERING MANAGEMENT. Prerequisite, M. E. 155.
Senior M. E., second term, 3-0-3.
This course includes descriptive materials and problems on the following subjects: Plant, Buildings and Equipment; Organization; Management Control; Labor and Materials.

M. E. 161. MACHINE DESIGN. Prerequisites, Mech. 40 and Mech. 48.
Senior M. E., first term, 5-3-6. (Effective 1938-39.)
M. E. 162. MACHINE DESIGN. Prerequisite, M. E. 161.
Senior M. E., second term, 4-3-5. (Effective 1938-39.)

M. E. 163. MACHINE DESIGN. Prerequisites, Mech. 40 and 48.
Senior M. E., first term, 4-0-4.
Senior Gen. Eng., first term, 4-0-4.
This course includes a study of the fundamental principles underlying the design of a machine, machine part, or structure. Consideration is given to the practical questions involved. The solution of many problems is required, the data for which are taken directly from existing machines.

M. E. 164. MACHINE DESIGN. Prerequisite, M. E. 163.
Senior M. E., second term, 2-6-4.
This course is a continuation of M. E. 163 with the introduction of Graphic Methods for determining stresses in structures and machine parts.

M. E. 166. INTERNAL COMBUSTION ENGINES. Prerequisites, M. E. 140, Mech. 40 and 48.
Senior M. E., General Option, first term, 3-0-3.
A study of the mechanical construction, engine cycles, ignition, fuels, fuel feeds, combustion, vibration and balancing, and performance of internal combustion engines with reference to aeronautical, automotive, and industrial use.

M. E. 169. FACTORY BUILDING EQUIPMENT. Prerequisite, junior standing.
Senior M. E., Industrial Option, first term, 3-0-3.
A study of the principles of heating, ventilating, plumbing, fire protection and water supply for industrial buildings, with the application to special problems.

M. E. 170, M. E. 170-c. REFRIGERATION, HEATING AND VENTILATION. Prerequisite, thermodynamics.
Senior M. E., second term, 5-0-5.
Senior M. E., Co-op., second term, 5-0-3.3.
This course is a study of the compressor, condenser, piping and accessories of the refrigeration plant, and other practical applications of the principles of refrigeration.
A study of the theory of heating and ventilation, with practical applications to existing buildings and other structures is made.
Text: 1936-37, Greene, Heating, Ventilating and Air Conditioning; Moyer and Fitz, Refrigeration.

M. E. 172. STEAM TURBINES. Prerequisite, M. E. 65, M. E. 140.
Senior M. E., first term, elective, 2-0-2.
This course includes a detailed study of the design and operation of steam turbines.
Text: 1936-37, Church, Steam Turbines.

M. E. 174. POWER PLANT DESIGN. Prerequisite, M. E. 65.
Senior M. E., second term, elective, 3-0-3.
This course covers the design of a power plant. Load curves are analyzed in order that the proper type and size of steam generator, prime movers and all auxiliary equipment may be selected for the given requirements. Due consideration is given to the financial side of the problem.
Specifications are considered with the purpose of limiting uncertainties and approaching the standards of modern practice.


M. E. 182. MOTOR VEHICLES. Prerequisites, M. E. 166, M. E. 164 parallel.

Optional Senior M. E., second term, 2-0-2.

This course takes up the general layout of cars, including a study of clutches, transmissions, universal joints, differentials, front and rear axles, worm drive, brakes, steering gears, controls, frames, springs, etc., supplemented with assigned problems of design.

M. E. 186. AERONAUTICAL ENGINES. Prerequisite, M. E. 44, or M. E. 140, Mech. 40 and 48.

Senior A. E., second term, 3-0-3.

This course deals with the latest type of aeronautical engines with emphasis on such features as weight, economy, performance, fuels, testing, thermodynamics, vibration and noise.

For Graduate Courses see page 172 of this catalogue.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

*Reserve Officers Training Corps*

For list of instructors and staff see page 19.

The War Department maintains four units of the R. O. T. C. in operation. They are as follows:

**INFANTRY, COAST ARTILLERY, SIGNAL CORPS, ORDNANCE**

As far as practicable students are enrolled in units in which the instruction is along the lines of their academic courses. For example only Electrical Engineering students are ordinarily accepted for the advanced Signal Corps course. Enrollment in the Coast Artillery unit is ordinarily restricted to Civil, Mechanical and Electrical Engineering students.

Ordnance and Signal Corps courses are available to co-operative students only.

**COURSES**


**Coast Artillery:** Basic Infantry Drill, Leadership, Army Organization, Military History and Policy, Sanitation, First Aid and Personal Hygiene, Artillery Weapons and Ammunition, Rifle Marksmanship, Obligations of Citizenship, Map Reading, Interpretation of Aerial Photographs, Orientation, Gunnery and Fire Control for Seacoast and Antiaircraft Artillery, Military Law, Tactics and Field Engineering.

Equipment

The United States has placed equipment valued at four hundred and fifty thousand dollars at "Tech" for the use of the R. O. T. C. This equipment comprises 1,303 rifles, belts, machine guns, automatic rifles of all types, trench mortars, 37 mm guns, hand and rifle grenades; sixty complete sketching cases; relief maps, rifles and ammunition for target practice, one 6-inch rifle, one anti-aircraft gun complete, two trucks, ten-ten tractor, complete fire control and range finding equipment, range finders, transits, telescopes, various types of radio telegraph and telephone sets, buzzers, complete automatic telephone installation, heliographs, projector, switchboards, telephones, etc.

Benefits

Each member of the Advanced Course (Juniors and Seniors) receives pay at the rate of $7.41 (seven dollars and forty-one cents) a month which is paid at the end of each quarter.

Uniforms

The cost of the uniforms in the Freshman year is $25.00, which must be deposited with the school treasurer upon registration. The uniform consists of cap, coat and trousers. Shirts may be purchased at $1.65 each. The Government refunds $9.00 at the close of the school year to each Freshman who was issued a uniform.

In the Sophomore year only replacements for articles of the Freshman uniform which are worn out are required, such as trousers, shirts and caps. The Government allowance for this year is $9.00.

In the Senior year the uniform is a standard U. S. Army Officers Uniform, consisting of cap, blouse, breeches, and boots. The cost of the uniform is $29.00 and the Government allowance is $29.00. The cost of the boots is around $8.50 and the Government allowance is $7.00.

With slight alterations this uniform constitutes a suitable reserve officers' uniform for use after graduation.

By saving his allowance in his Sophomore year, that is, not buying unless he needs it, a student can get his complete uniform for the Ad-

vanced Course without spending a cent, provided, of course, he takes care of his clothes and makes them last.

Students are not allowed to wear the uniform except on drill days (Tuesdays and Thursdays) or when special orders to do so are given by their Unit Commanders.

Summer Camp

Members of the Advanced Course are required to attend camp one summer and normally between the Junior and Senior years. They receive pay at the rate of 66½c per day for the duration of the camp. All students going to camp receive mileage for the round trip at the rate of 5c per mile and are messed, housed, uniformed and given medical attention at government expense while in camp. From the time the student leaves school until the time he returns to his home he has no expense. The camp is of 6 weeks' duration and is begun about June 10th each year.

In addition to the military training that the student receives in camp he has an opportunity to participate in healthy outdoor sports of all kinds and in competition with young men from other colleges. A well arranged religious program is conducted at each of the several camps by experienced chaplains.

The following college credits are allowed for Military Science and Tactics:

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<thead>
<tr>
<th>Regular Four-Year Course</th>
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<tbody>
<tr>
<td>FRESHMAN YEAR</td>
<td>3 credit hours</td>
<td>(1.5 per semester)</td>
</tr>
<tr>
<td>SOPHOMORE YEAR</td>
<td>3 credit hours</td>
<td>(1.5 per semester)</td>
</tr>
<tr>
<td>JUNIOR YEAR</td>
<td>6 credit hours</td>
<td>(3 per semester)</td>
</tr>
<tr>
<td>SENIOR YEAR</td>
<td>6 credit hours</td>
<td>(3 per semester)</td>
</tr>
<tr>
<td>TOTAL</td>
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<tr>
<th>Co-operative Five-Year Course</th>
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</thead>
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<td>(1 per quarter)</td>
</tr>
<tr>
<td>SOPHOMORE YEAR</td>
<td>2 credit hours</td>
<td>(1 per quarter)</td>
</tr>
<tr>
<td>PRE-JUNIOR YEAR</td>
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</tr>
<tr>
<td>JUNIOR YEAR</td>
<td>4 credit hours</td>
<td>(2 per quarter)</td>
</tr>
<tr>
<td>SENIOR YEAR</td>
<td>4 credit hours</td>
<td>(2 per quarter)</td>
</tr>
<tr>
<td>TOTAL</td>
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<td></td>
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</tbody>
</table>
The Department of Modern Language offers both Elementary and Advanced Courses in French, German and Spanish.

**COURSES OF INSTRUCTION**

*NOTE: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit*  

**M. L. 1. Elementary German.**  
First term, 3-0-3.  
German grammar, including the declension of nouns and adjectives, the conjugation of strong and weak verbs, the use of prepositions, and the word-order in the independent clause. Translation of easy German into English and of easy English sentences into German.

**M. L. 2. Elementary German.**  
Second term, 3-0-3.  
Continuation of M. L. 1, emphasizing the use of the tense-auxiliaries haben, sein and werden, the modal auxiliaries, *dürfen, können, mögen, müssen, sollen* and *wollen*, the passive voice; the separably and inseparably compounded verbs, and the word-order in the dependent clause. The translation of more difficult German and the acquisition of a larger number of common household German words.

**M. L. 3. Advanced German.**  
First term, 3-0-3.  
Grammar reviewed in connection with translations of classical German writers and modern writers with introduction to scientific German. Stress is laid on the acquisition of a vocabulary for speaking and writing German and for translating German into English.

**M. L. 4. Advanced German.**  
Second term, 3-0-3.  
German syntax with special reference to the sentence structure in connected prose. Translation of scientific German works on heat, light, electricity, electric motors, magnetism, the steam engine and commerce.

**M. L. 1c, 2c, 3c. Elementary German.**  
Co-ops., twelve weeks each, 3-0-2 each.  
These three courses are equivalent to M. L. 1 and M. L. 2.

**M. L. 4c, 5c, 6c. Advanced German.**  
Co-ops., twelve weeks each, 3-0-2 each.  
These three courses are equivalent to M. L. 3 and M. L. 4.

**FRENCH**

**M. L. 7. Elementary French.**  
First term, 3-0-3.  
Elements of French grammar, including forms of nouns and adjectives; regular conjugations, use of *avoir* and *être* as auxiliary verbs; position of personal pronoun objects; cardinal and ordinal numbers; translation of easy English sentences into French and of easy French prose into English.

**M. L. 8. Elementary French.**  
Second term, 3-0-3.  
Grammar review in connection with translation; drill on the forms of regular and irregular verbs, use of tenses, relative and interrogative pronouns, passive voice, and the infinitive; French dictation, composition and conversation.

**M. L. 9. Advanced French.**  
First term, 3-0-3.  
This course includes the translation of advanced literary and scientific French texts; exercises in connected French prose with special reference to French syntax; sight translations, French dictation and French conversation.

**M. L. 10. Advanced French.**  
Second term, 3-0-3.  
This course is a continuation of M. L. 9, in which the aim is to secure a broader knowledge of French literature and a more accurate knowledge of French composition, and French conversation. Texts are taken from the more advanced works of the classic and modern French periods, from French reviews, French newspapers and scientific magazines. Stress is laid on correct pronunciation with practice in the use of ordinary daily French conversation.

**SPANISH**

**M. L. 13. Elementary Spanish.**  
First term, 3-0-3.  
Spanish grammar, including forms of nouns and adjectives; the position of adjectives; the regular conjugations; the idiomatic use of *estar*, *haber*, *hacer*, *ser* and *tener.*
M. L. 14. **Elementary Spanish.**
Second term, 3-0-3.
Spanish grammar, including the position of personal pronoun objects; verbs with radical change; irregular verbs; use of the Subjunctive mood in commands; the passive voice; the common idioms of everyday Spanish.

M. L. 15. **Advanced Spanish.**
First term, 3-0-3.
This course is devoted to Spanish composition, Spanish conversation and to the translation of the works of greater difficulty of the classic and modern Spanish writers.
Texts: *Selections from Alarcon, Valdos, Blasco Ibanez, Cervantes, Isaacs.*

M. L. 16. **Advanced Spanish.**
Second term, 3-0-3.
This course is a continuation of M. L. 15, in which stress is laid on; the acquisition of the vocabulary of everyday life; Spanish composition and Spanish conversation; the ability to write business letters in Spanish; fluency in translating technical, commercial and newspaper Spanish as well as the classic and modern writers of the drama and the novel.

DEPARTMENT OF NAVAL SCIENCE AND TACTICS

*Reserve Officers' Training Corps*

For list of instructors and staff see page 20

The primary object of the Naval Reserve Officers' Training Corps is to provide systematic instruction and training at civil educational institutions which will qualify students for appointment as officers in the Naval Reserve; the Naval Reserve Officers' Training Corps will be expected to supply efficient Junior Officers to the Naval Reserve and thus assist in meeting the demands for increased commissioned personnel in war time.

The course in Naval Science and Tactics of the Naval Reserve Officers' Training Corps is of four years' duration, divided into the Basic Course and the Advanced Course.

The Basic Course consists of the first two years of the course in the department of Naval Science and Tactics and is available only for freshmen and sophomore classes of the institution.

The Advanced Course consists of the final two years of the course in Naval Science and Tactics, or of such shorter periods of time as may be prescribed by the Secretary of the Navy. The Advanced Course is available only to students who have successfully completed the basic course and who are in the junior and senior years of the academic department.

Subjects provided are grouped under four general headings.

**Seamanship:** Naval Leadership, Boats, Signals, Ground Tackle, Rules of the Road, Handling and Maneuvering of Steamers, Communications, Administration and Discipline, Naval Policy and Elements of Naval Aviation.

**Navigation:** Piloting, Dead Reckoning, Nautical Instruments and Publications, Magnetic and Gyro Compasses, Practice of Navigation at Sea.


**Naval Engineering:** The course contemplates giving the Reserve Officer sufficient knowledge of the engineering machinery of a ship and its operation to qualify him completely for his deck duties. Boilers, fuels, steam engines, steam turbines, electric propulsion, auxiliaries, refrigeration, Diesel engines, operation and management of engineering plant, electricity aboard ship, and naval communications.
Each student taking the advanced course will receive commuted rations at the rate of approximately $7.50 a month, provided his grades are satisfactory.

At present the total number of students enrolled in the Naval Unit is limited to 200.

Equipment

The Government has furnished the Naval Unit at Georgia Tech with the following equipment: rifles, pistols, machine guns, 4-inch guns from a Destroyer, spotting boards, drill guns, etc., and equipment connected therewith; a model case with sectionized types of primers, tracers and fuses; colored prints of machine guns and depth charges; mines and anchors; a torpedo room with sectionized torpedo, torpedo parts and colored prints of the torpedo and its parts; a torpedo director; knotting and splicing boards; signal flags and pennants and visual system of communication; equipment for instruction in seamanship, navigation, etc.; a ten-foot model of the Cruiser "COLUMBIA," a replica of a ship's bridge with wheel, compass, and pelorus for instruction in steering and compass work.

Summer Cruise

(a) An annual summer cruise of from 2 to 3 weeks' duration is usually provided. Before embarkation, inoculation against typhoid and smallpox is required.

(b) Every member of the Naval R. O. T. C. unit is expected to take the first cruise available if provided.

(c) One cruise is required during the advanced course.

(d) In selecting Naval R. O. T. C. students from the Freshman class preference is given those applicants who agree to take all summer cruises provided in the course.

(e) Members of the advanced course are entitled to pay of the Seventh Grade ($21.00) per month) while on cruises.

The following college credits are allowed for Naval Science and Tactics:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Year</td>
<td>3</td>
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<tr>
<td>Sophomore Year</td>
<td>3</td>
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<tr>
<td>Junior Year</td>
<td>6</td>
</tr>
<tr>
<td>Senior Year</td>
<td>6</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

In addition, student officers who satisfactorily complete a Naval R. O. T. C. Summer Cruise receive credit toward graduation at the rate of one-half semester hour for each week on the cruise provided that the total credit hours so obtained shall not exceed 3 credit hours.

Department of Physics

Professors Howey, Edwards and Herou; Associate Professor Bortell; Assistant Professors Prosser, Boyd, Ewalt, Johnson and Rosselot

The aim of this department is to present the fundamental principles of Physics, the experimental work upon which they rest, and, as far as possible, the mathematical reasoning employed in the deduction of various formulas.

The courses in laboratory are designed to give the student practice in the art of making measurements of known precision, proficiency in the manipulation of apparatus, and a more thorough familiarity with some of the fundamental concepts of physics.

COURSES OF INSTRUCTION

NOTE: 4-3-5 means 4 hours class, 3 hours laboratory, 5 hours credit


Sophomore Arch., T. E., and I. M., first term, 3-3-4.

This course consists of recitations, problems and lectures. The Properties of Matter, Mechanics of Solids, Mechanics of Fluids and Heat are included in this course. A large number of numerical problems are solved.

Text: Black, *College Physics.*

**Phys. 22. Elementary Sound, Light and Electricity.** Prerequisite, Phys. 21. Fee $3.00.

Sophomore Arch., T. E., and I. M., second term, 3-3-4.

A continuation of Phys. 21, Sound, Light and Electricity are treated in an elementary way.

Text: Black, *College Physics.*

**Phys. 23. Mechanics.** Prerequisite, Math. 18.


A course in Mechanics, Elasticity, and Mechanics of Fluids. The solution of a large number of numerical problems is required involving the use of the English Engineer's and metric systems of units.


[153]
Fee $3.00.
Sophomore M. E., E. E., C. E., Cer. E., and A. E., second term, 4-3-5.
A continuation of Phys. 23. The laboratory part of this course includes also experiments in Mechanics and Heat.
Text: Hausmann and Slack, Physics.

Junior C. E., M. E., E. E., and A. E., first term; Cer. E., second term,
3-3-4.
This course is given by lectures, recitations and instruction in the laboratory.
Text: Hausmann and Slack, Physics.

Sophomore Ch. E., first term, 5-3-5.
A course in Mechanics, Mechanics of Fluids, Properties of Matter, and Heat. The solution of problems is required involving the English Engineer's and metric systems of units.
Text: Mendenhall, Eve and Keys, College Physics.

Phys. 28. Electricity, Sound, and Light. Prerequisite, Physics 27.
Fee $3.00.
Sophomore Ch. E., second term, 5-3-5.
This course is a continuation of Physics 27.
Text: Mendenhall, Eve and Keys, College Physics.

Sophomore Co-op., first term, 6-3-4-7.
A course in Mechanics, Elasticity, Mechanics of Fluids and Heat. The solution of a large number of numerical problems is required involving the use of the English Engineer's and metric systems of units.
Text: Hausmann and Slack, Physics.

Phys. 34c. Heat, Magnetism and Electricity. Prerequisite, Phys. 33c.
Fee $2.00.
Sophomore Co-op., second term, 6-3-4-7.
A continuation of Phys. 33c.
Text: Hausmann and Slack, Physics.

Phys. 35c. Electricity, Sound and Light. Prerequisites, Phys. 34c and Math. 23. Fee $2.00.
Pre-Junior Co-op., first term, 4-3-3-3.
This course is similar to Phys. 25.
Text: Hausmann and Slack, Physics.

Phys. 61. Intermediate Modern Physics. Prerequisites, Phys. 28 (or 25) and Calculus.
Senior Ch. E., first term, 3-0-3.
The topics treated in this course include the structure of bulk matter, the structure of individual molecules and atoms, the nature of elementary particles, the nature and properties of light and x-rays, and related phenomena of practical interest.
Text: To be announced.

Phys. 65. Advanced Laboratory. Prerequisite, Phys. 28.
Senior Ch. E., first term, 0-3-1.
Experiments of particular interest to chemical engineers.

Phys. 93-94. Special Problems. Admission to this course will be granted by the department only to individual students.
First term, 0-4-1, second term 0-8-2.
The instruction will include library, conference and laboratory work designed to give the student training in the methods of industrial research.

Phys. 190. High Temperature Measurement. Prerequisites, Phys. 25 or 28 and one year of Chemistry.
Senior Cer. E., second term, 1-3-2.
This course consists of a study of scientific and commercial forms of temperature measuring devices; their calibration, conditions of use, and the principles on which each is based.

For Graduate Courses see page 174 of this catalogue.
DEPARTMENT OF TEXTILE ENGINEERING

The A. French Textile School

Professor Jones; Assistant Professors Hill and Carmichael;
Instructors Philpot and Brandon

The Textile Department gave the first instruction in textile education in the South in February, 1899. Since that time, it has continued to grow and serve the needs of the textile industry, which during these years has become one of the leading industries of the South.

The course of instruction covers a period of four years, and leads to the degree of Bachelor of Science in Textile Engineering. The course includes a sound foundation in engineering subjects, in addition to the purely textile branches. The work for the first three years is uniform, but during the senior year, the student may choose one of several options.

The course of instruction is arranged so as to combine the theoretical and practical aspects of the subject. The department has an excellent collection of textile books and periodicals which are used by students in their research work. Practical work is given in all phases of manufacturing throughout the course, enabling the student to familiarize himself with all details in the construction and operation of the various machines and processes. Yarns required in the weaving rooms are manufactured in the carding and spinning department, thus affording opportunity for performing the complete series of operations from raw material to finished fabric.

The department was originally intended to work solely with cotton, but since the rayon industry has become so important, the scope of instruction has been broadened to include the theoretical and practical study of these newer fibers.

The department offers excellent advantages to young men who intend entering any branch of the textile industry, and the practical results of the course are well illustrated by the positions of trust and responsibility held by the alumni.
**SOPHOMORE YEAR**

**First Term**

<table>
<thead>
<tr>
<th>COURSE NO.</th>
<th>SUBJECT</th>
<th>CLASS</th>
<th>LAB.</th>
<th>CREDIT</th>
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<tbody>
<tr>
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<td>Economics</td>
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<td>3</td>
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<tr>
<td>33</td>
<td>Humanities</td>
<td>3</td>
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<td></td>
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<tr>
<td>23</td>
<td>Differential Calculus</td>
<td>5</td>
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<td>21</td>
<td>Physics</td>
<td>3</td>
<td>4</td>
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<td>39</td>
<td>Weaving</td>
<td>3</td>
<td>1</td>
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<tr>
<td>59</td>
<td>Yarn Manufacture, Practice</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Military or Navy</td>
<td></td>
<td></td>
<td>5</td>
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**Second Term**

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<tr>
<td>Qualitative Analysis</td>
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<td>Humanities</td>
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<tr>
<td>Physics</td>
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<td>Fabric Design</td>
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<tr>
<td>Weaving</td>
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<td>1</td>
<td>4</td>
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<tr>
<td>Yarn Manufacture, Practice</td>
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<td>3</td>
<td>1</td>
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<tr>
<td>Military or Navy</td>
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**JUNIOR YEAR**

**First Term**

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<td>15</td>
<td>Machine Lab. (Mil. Elec. 3 hrs.)</td>
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<td>29</td>
<td>Applied Mechanics</td>
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<td>35</td>
<td>Fabric Design and Analysis</td>
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<td>45</td>
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<td>61</td>
<td>Yarn Manufacture, Theory and Practice</td>
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**Second Term**

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<th>SUBJECT</th>
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<tr>
<td>Organic Chemistry</td>
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<td>Kinematics of Mechanism</td>
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<td>Public Speaking (Mil. Elec.)</td>
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<td>Fabric Design and Analysis</td>
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<td>Weaving</td>
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<td>Yarn Manufacture, Theory and Practice</td>
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**TEXTILE ENGINEERING**

**SENIOR YEAR**

**First Term**

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<th>OPTION No. 1</th>
<th>COURSE NO.</th>
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<tr>
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<td>E. E. 2</td>
<td>Applied Electricity</td>
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<td>M. E. 43</td>
<td>Thermodynamics</td>
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<td>M. E. 45</td>
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<td>T. E. 37</td>
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<td>T. E. 83</td>
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**Option No. 2**

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**Option No. 3**

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<td>Yarn Manufacture, Theory and Practice</td>
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<td>Dyeing</td>
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<tr>
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**SECOND TERM**

**Option No. 1**

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<td>Ez. 91-96</td>
<td>Accounting and Law</td>
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<td>Electrical Engineering Laboratory</td>
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<td>M. E. 54</td>
<td>Fuels, Materials, and Engine Laboratory</td>
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<td>Elementary Steam Power Engineering</td>
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T.E. 83-84. DYEING.

Seniors, first term, 3-3-4; second term, 2-3-3. Fee $2.00.

A study of the theory and practice of dyeing, bleaching, finishing and related operations as applied to the common textile fibers. In this course a study of the methods and materials employed is made by means of lectures and in conjunction with laboratory and machine application.
First term, 4-6-6; second term, 4-3-5.
Option 2, Seniors. Fee $2.00.
Lectures are given covering the properties and uses of all textile fibers; the design and construction of a wide range of standard fabrics; and methods of cost finding for yarns and fabrics. Laboratory classes are held for analyzing numerous types of cloth; for original work in designing; and for a study of color in relation to textiles.

Seniors (see options), 1-2-1.5.
Experiments in testing various textile materials, particular emphasis being given to physical testing of vegetable fibers in accordance with standard testing laboratory practice.

Option 3, Seniors, second term, 1-2-1.5.
Lectures and experiments dealing with the physical testing of the rayons and synthetic fibers. A study of their properties and test methods in comparison with the natural fibers.

Option 3, Seniors, first term, 2-6-4. Fee $2.00.
Lectures and laboratory practice dealing with the rayons and synthetic fibers, their chemical properties and methods of processing for textile use. In this course, attention is given also to the examination and testing of agents and materials employed in the processing of synthetic yarns and fabrics.

For Graduate Courses see page 175 of this catalogue.
GRADUATE COURSES
Gilbert H. Boggs, Dean

This section contains descriptions of various courses offered by the departments of the Georgia School of Technology and designed primarily for graduate students. Undergraduates are permitted to register for these courses only on recommendation of the head of the department concerned and with the approval of the committee on Graduate Courses. Other courses open to both graduate and undergraduate students are described in the sections of this catalog devoted to the various departments. These courses are numbered from 100 to 199 inclusive.

Applicants for registration for graduate degrees must be graduates of approved colleges or universities, and are required to furnish complete transcripts of their undergraduate records and secure the permission of the heads of the departments in which they wish to work.

Tuition and other fees for those taking full schedules will be as for undergraduates; part time students will be charged tuition based upon the number of credit hours scheduled, and will be fixed at time of registration.

THE MASTER OF SCIENCE DEGREE

At least one year of resident graduate work will be required to obtain the M. S. degree, and in cases where undergraduate work has not furnished an adequate foundation, more time may be required.

The following regulations concerning the M. S. degree have been approved by the Faculty:

1. To be accepted as a candidate for the M. S. degree, the applicant must have made a grade above the average of his class. This must be certified by the institution in which the undergraduate work was completed, and his application must be approved by the Committee on Graduate Courses.

2. The student must complete with a general average of "B" or higher 32 credit hours of prescribed work approved by the Committee on Graduate Courses and by the heads of the departments concerned.

3. The prescribed subjects must be selected from not more than three departments, and 24 credit hours of these subjects must be in one department.

4. In all cases at least 15 hours of work, exclusive of the thesis, must be taken in graduate subjects, which are in advance of the subjects offered to undergraduates.

5. A thesis on some research problem must be offered by the candidate and approved by the department concerned, and, before final acceptance, must receive approval of two members of the Faculty of professorial rank, not connected with the department in which the work is done. Credit for the thesis up to a maximum of 13 hours may be allowed upon approval of the head of the department in which the major work is taken. The student must furnish the school library with the original and one additional copy of the thesis, bound in durable form, in a manner approved by the school librarian.

6. The remaining hours necessary to make up the total of 32 may be selected either from additional graduate subjects or from advanced undergraduate subjects listed in the various departmental sections and carrying numbers 100 to 199, inclusive. All schedules are subject to the approval of the departments concerned and the Committee on Graduate Courses. In no case may a student count for graduate credit any subject which he has counted toward his Bachelor's degree.

7. A graduate student cannot become a candidate for the M. S. degree until he has completed the prerequisites for the graduate courses he proposes to offer for that degree.

8. A reading knowledge of a modern language may be required in certain courses.

COURSES OF INSTRUCTION

The following graduate courses will be given provided a sufficient number of students apply:

DEPARTMENT OF AERONAUTICAL ENGINEERING

NOTE: 3-3-4 means 3 hours class, 3 hours laboratory, 4 hours credit


The facilities of the School of Aeronautics are such as to permit graduate students to conduct thesis research in the fields of aerodynamics, structures, airscrews, or engines, and equipment for instrument research is to be added in 1937.

A. E. 201. Theoretical Aerodynamics—Perfect Fluids. Prerequisites, A. E. 131, Math. 201, 202 or equivalent. (Johns.)

First term, 3-0-3.

Mathematical study of classical hydrodynamics covering potential and rotational flows, the phenomenon of circulation, and the principle of superposition of flows.

A. E. 202. Theoretical Aerodynamics—Wing Theory. Prerequisite, A. E. 201. (Johns.)

Second term, 3-0-3.

Critical examination of existing theories of the airfoil in two dimensions, the monoplane airfoil, and multiplane and other interference phenomena.
166 GEORGIA SCHOOL OF TECHNOLOGY

*A. E. 205. THEORETICAL AERODYNAMICS—Viscous Fluids. Prerequisites, A. E. 131, A. E. 202, Math. 201, 202 or equivalent. (Mills.)
First term, 3-0-3.
Mathematical study of the laws of similarity, laminar flow of viscous fluids, boundary layer phenomena, skin friction, and turbulence.

*A. E. 206. THEORETICAL AERODYNAMICS—Compressible Fluids. Prerequisites, A. E. 131, A. E. 202, Math. 201, 202 or equivalent. (Mills.)
Second term, 2-0-2.
Study of the effects of compressibility on the motion of bodies at velocities in the vicinity of that of sound.

A. E. 207-208. AIRPLANE DESIGN PROBLEMS. Prerequisites, A. E. 141, 142 or equivalent. (Schwartz.)
First and second terms, 0-6-2.
Analysis of the special problems introduced in airplane design by multimotored installations, retractable landing gears, wing flaps, and special duty requirements.

*A. E. 210. THEORY OF VIBRATIONS. Prerequisites, A. E. 131, Math. 201, 202 or equivalent.
Second term, 3-0-3.
Mathematical study of vibrations with applications to the problems of engine and propeller vibration, wing and tail flutter, and the reduction of noise.

*A. E. 213. THEORY OF THE PROPELLING AIRSCREW. Prerequisite, A. E. 131. (Knight.)
First term, 3-0-3.
Critical examination of existing theories of the propulsive airscrew.

*A. E. 214. THEORY OF THE LIFTING AIRSCREW. Prerequisite, A. E. 213.
Second term, 3-0-3. (Knight.)
Mathematical analysis of the airscrew as a lifting means in connection with the autogiro, helicopter, and cyclogyro types of aircraft.

*NOTE: These courses will be offered for the first time in 1937-38.
alumino-silicates are considered. The control of plasticity, viscosity, adherence, permeability, dispersion, and flocculation is studied together with industrial applications.

Cer. 205. Ceramic Applications of the Phase Rule.
First term, 3-0-3.

The Phase Rule is reviewed with particular emphasis on its applications in the field of silicate technology. Cements, glass, glazes, enamels, refractories, and other ceramic wares furnish processing conditions which yield to the application of the phase rule for technical control.

Cer. 207-208. Glass Technology.
First term, 3-3-4; second term, 3-3-4.

The properties of silica and the broad field of glass technology are included. Sosman's "Properties of Silica" is the text for one semester. The second semester is concerned with the pyro-chemical and physical properties of the oxides, as well as the glassy melts obtainable from them. Practical processing of various types of glass is taken up in theory and laboratory practice.

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING


The graduate students meet weekly with the departmental staff and present papers on assigned topics in the literature. General discussion follows.

Chem. 220. Research in Analytical Chemistry.

The instruction is individual. Time and fees may be arranged in conference with the Division Chief.

Chem. 221-222. Organic Chemistry.
First and second terms, 3-0-3.

The work of this course consists of a complete review of aliphatic and aromatic organic chemistry with a more detailed study of organic metallic compounds, furfural derivatives, dyes, pyridine and piperidine derivatives, and alkaloids.

Chem. 223. Organic Preparations.
First term, 0-6-2. Fee $8.00.

Some of the more difficult organic preparations are made.

Chem. 224. Organic Analysis, Qualitative and Quantitative.
Second term, 0-6-2. Fee $6.00.

Ultimate analyses of organic substances are made and the methods of identification of compounds and characteristic groups studied.

Chem. 243-244. Physical Chemistry. Prerequisite, Chem. 148 or the equivalent.

First and second terms, 3-0-3.

These are courses of selected topics in advanced physical chemistry, the content of the course being determined largely by the needs of the class.


First and second terms, 3-0-3.

Advanced organic chemistry is studied along with its application to the chemical industries.

CH. E. 236. Chemistry and Technology of Cellulose. Prerequisite, CH. E. 161.

Second term, 3-0-3.

After presenting a survey of the chemistry of cellulose and the concept of its structure, those chemical industries are studied in which cellulose is the chief raw material.


First term, 3-0-3.

Problems and discussions of the more complicated apparatus used in heat transmission such as multiple effect evaporators, and an extension of heat transmission by radiation.

DEPARTMENT OF CIVIL ENGINEERING


C. E. 201-202. Concrete Design.

Four to nine hours per term. Fee $1.00 each term.

Courses in the design and construction of multiple arch spans, office buildings, fireproof residences and arch dams.
C. E. 203-204. **Steel Bridge Design.**
Four to nine hours per term. Fee $1.00 each term.
Courses in the design of suspension bridges, draw spans, rolling and lift bridges.

C. E. 205-206. **Water Power Development.**
Four to nine hours per term.
Methods of impounding water, the selection of turbines, and power house equipment, design of water wheels, turbines, penstocks, flumes, draft tubes, tail races.

C. E. 207-208. **Highway Transportation and Research.**
Four to nine hours per term. Fee $1.00 each term.
Courses in the economics of highway design and construction. Laboratory research along some line of highway development.

C. E. 209. **Design and Construction of Airports.**
Four to nine hours per term. Fee $1.00.
A study of ground areas, drainage, runways, location of hangars, terminal buildings and lighting equipment.

DEPARTMENT OF ELECTRICAL ENGINEERING

E. E. 200. **Thesis.**

First term, 5-0-5.
This course deals with the theory of transient phenomena and the application of mathematical analysis to problems pertaining to circuits and machines.

E. E. 203. **Laboratory.** Parallel E. E. 201.
First term, 0-9-3.
A continuation of E. E. 118.

E. E. 204. **Transmission and Distribution of Electrical Energy.**
Prerequisites, E. E. 130, E. E. 201.
Second term, 3-0-3.
Overhead and underground transmission of power by means of alternating and direct currents. The complete solution of long transmission lines; the stability of transmission systems; short circuits occurring in networks; and inductive interference between transmission and communication lines.

E. E. 205. **Illumination.** Prerequisite, Phys. 25.
First term, 3-0-3.
A course dealing with the principles of illuminating engineering and photometers. Problems of illumination for specific conditions are studied.

E. E. 206. **Electric Railways.** Prerequisite, E. E. 190.
Second term, 3-0-3.
A course consisting of recitations and computations of special problems pertaining to modern electric railways and steam railway electrification.

E. E. 207. **Radio.** Prerequisite, E. E. 189.
First term, 3-0-3.
A study of the properties of oscillatory circuits, including series and parallel resonance, coupled circuits, wave filters, antennas and radiation.

E. E. 208. **Radio.** Prerequisite, E. E. 207.
Second term, 3-0-3.
A continuation of E. E. 207, dealing with the application of thermionic tubes to radio and telephone communication. Quantitative analysis will be employed where it is appropriate.

DEPARTMENT OF ENGINEERING DRAWING AND MECHANICS

MECH. 205-206. **Advanced Strength of Materials.**
Prerequisites, Mech. 48 and Math. 136.
First and second terms, 3-0-3.

MECH. 207-208. **Applied Elasticity.**
DEPARTMENT OF MATHEMATICS

First and second terms, 3-0-3.
This course is intended to acquaint the student with methods and theorems which will be of practical value to him in solving problems that arise in his professional work, and will also enable him to understand the mathematical analysis used so frequently in technical papers and scientific journals. The topics included are functional determinants and implicit functions, maxima and minima of several variables, the Cauchy-Lagrange law of the mean, uniform convergence of series and integrals, continuity, differentiation and integration of integrals that contain a parameter, line integrals and Green's theorem, elliptic integrals, the differential equations of Gauss, Legendre and Bessel, certain partial differential equations of the second order, and the elements of Fourier series.

DEPARTMENT OF MECHANICAL ENGINEERING


First term, 3-0-3; second term, 3-0-3.
Work in Maxwell's relations, general thermodynamic equations, solutions, chemical equilibrium, and determination of properties of fluids. Work on thermodynamics of combustion, heat transfer, flow of fluids, and other practical applications.

M. E. 204. Power Plant Engineering.
Either term, 3-0-3.
Design, development and special problems in modern super-power stations.

Either term, 3-0-3.
This course consists of the design of heating, ventilation and air conditioning systems for industrial, commercial and residential service.

M. E. 206. Diesel Engines.
A study of injection engine problems, with reference to injection system, and combustion chamber, and comparison with other types of engines, and the application of these engines.

M. E. 207. Internal Combustion Engine Design.
Either term, 3-0-3.
The design of an internal combustion engine for any selected cycle to meet certain specific conditions. The conditions may be made for aeronautical, automotive, or industrial use at the option of the student. Partial designs using different cycles may be worked out for comparative purposes. A problem in balancing in preference to a complete design may be selected.

M. E. 208. Materials Laboratory. Prerequisite, M. E. 57. Fee $2.50.
This course covers the stress and analysis of built-up structural members using concrete and steel and other materials. Suitable problems will be studied to meet the needs of the student.

M. E. 209. Heat Laboratory. Prerequisites, Phys. 23 and 24 and M. E. 42 or M. E. 41. Fee $2.50.
Six to nine hours.
The work in this course includes the determination of heat transfer characteristics for various types of apparatus, using gases, liquids, and solids as heat carriers. It also includes such work on the flow of fluids as might be required to suit the needs of the student.

Either term, 3-0-3.
The special study and design of various automotive sub-assemblies as steering, front axle assembly, etc.

M. E. 211. Dynamics of Aeronautical Engines.
A study of forces created by the engine mechanism, including the forces of inertia, torsion, torque reaction and combustion in relation to engine vibration.

M. E. 212. Railway Motive Power.
Either term, 3-0-3.
A study of steam, electric, and oil locomotives, their design, development, and application.

Either term, 3-0-3.
Scientific management in American industry.
M. E. 216. **Industrial Safety Engineering.**
Either term, 3-0-3.
A study of safety problems in industry including workmen's compensation laws, safety devices, education, etc.

M. E. 219-220. **Mechanical Engineering of Office and Industrial Buildings.**
Either term, 3-0-3.
A study of such building features as heating, lighting, power, water supply, sanitation and air-conditioning.

M. E. 222-223. **Theory of Machines and Design.**
First term, 3-0-3; second term, 5-0-5.
The application of mechanics of materials followed by rational design and individual problems.

M. E. 245-246. **Problems in Mechanical Engineering.**
Credit to be arranged.
This course is to meet the need of the student who has in mind a special problem or study of his own that is worth while. (Not research.)

M. E. 248-249. **Research.**
Credit to be arranged.
For the solution of problems of interest to the student that may require original investigation.

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**DEPARTMENT OF PHYSICS**

Second term, 2-0-2.

**Phys. 250. Modern Physics.** Prerequisites, Phys. 25, Math. 23 and 24, and Chem. 3 and 4 or Chem. 7 and 8.
First term, 3-0-3.
This course deals with such topics as electrical discharge through gases, photo-electric phenomena, x-rays, spectroscopy and atomic structure.

**Phys. 261. Mathematical Introduction to Theoretical Physics.**
Prerequisites, Math. 136, Phys. 25.
First term, 3-0-3.
This course includes Vector Analysis, an introduction to Tensor Analysis, treatment of periodic phenomena with the aid of complex numbers and Fourier Series, and selected topics from Functions of Complex Variables.

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**GRADUATE COURSES**

**Phys. 262. Theoretical Dynamics.** Prerequisite, Phys. 261.
Second term, 3-0-3.
Dynamics of Particles, Rigid Bodies and Deformable Bodies; Wave Motion; Hamilton's and Lagrange's Equation; Hydro- and Aero-dynamics; numerous applications.

Second term, 2-0-2.
This course includes a study of electricity, matter, electromagnetic radiation and energy, stressing particularly those developments of Physics which have found commercial application. Specific topics to be included are electrons and electronic devices, photo-electricity, piezo-electricity, photo-elasticity, x-rays, and crystal structure.

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**DEPARTMENT OF TEXTILE ENGINEERING**

**T. E. 200. Thesis.**

**T. E. 222-223. Dyeing.** (Jones).
First and second terms, 1-2-1.3. Fee $2.00 each term.
This is a continuation of the regular course in Dyeing. Special attention is given to dyeing of some of the textile fibers other than cotton and wool. Considerable time is devoted to the accurate matching of shades from a given sample. Time is also spent in testing the dyeings for fastness toward various agencies.

First and second terms, 0-3-1. A continuation of the work in T. E. 135-136, making complete analyses of complicated fabrics. Qualitative and quantitative tests for the different fibers are made with mixed goods.

First and second terms, 0-3-1.
A course of special problems in both dobby and jacquard design. Color and pattern sketches are made and the dyehouse and loom layout necessary together with cost estimates in production.

**T. E. 263-64. Yarn Manufacture.** (Hill).
First and second terms, 1-2-1.3. Prerequisite, T. E. 63-64.
An advanced course in Yarn Manufacture, the work to include a more detailed study of newer methods and developments in yarn manufacture, together with problems and experiments in the production of special yarn numbers.
DEPARTMENT OF PERSONNEL

DIRECTOR, DEAN FLOYD FIELD; ASSISTANT DIRECTOR, G. C. GRIFFIN; ALUMNI SECRETARY, R. J. THIESSEN; OFFICE SECRETARY, NELL FULMER.

The Georgia School of Technology maintains a Personnel Department for more satisfactory adjustment of the students to college life, and to assist them in thinking through their life problems and strengthening their standards and ideals.

The Department registers all Freshmen, explains the steps necessary for meeting classes, gives instruction in the topics: how to study; importance of a college record; health and hygiene; campus activities; and discusses the technique of making proper social contacts through churches and campus social groups.

An employment service is maintained for students who are unable to provide their school expenses. This service provides part time employment for worthy men to help pay their college expenses. It is impossible, however, for the average student to carry a full schedule and work more than two or three hours per day without failure in one or more subjects. A student who must work in order to go to school should ask for a light schedule and allow more than four years for his degree.

By the co-operation of the Government other worthy and needy students are given part time employment which provides $10.00 to $15.00 per month towards their expenses. Here again it is necessary to maintain a passing grade in all subjects in order to be continued in this work.

Every Freshman is given a personal interview after the work is started to see if he is properly adjusted; and many of these cases are followed up by changes in schedule, medical attention, correspondence with parents or other action which may assist the student in making progress.

It is planned to extend these conferences through the entire course as a guide in choosing life work, adjusting difficulties and making proper contacts for entering the industries.

This Department serves as an intermediary between the High School and College, visiting the High Schools for interviews with prospective students and helping them to get adjusted to college when they register.

Counsel and assistance are also given to the leaders of campus group activities, in order that they may maintain their ideals and provide constructive and helpful activities for all interested students.

All seniors are allowed to register in this office for employment. Interviews are arranged for them with prospective employers and records are supplied to others which results in placing many students in positions at the time of their graduation. The Alumni Secretary, in his capacity as Alumni contact man, acts as a clearing house for Tech men after graduation. Tech graduates should keep their files in this office up to date even if they are not in line for change or promotion.

SUMMER SCHOOL

THE FORTY-FIRST ANNUAL SESSION

Nine Weeks

Executive Committee: Professors Skiles, Daniel, and Stamy.

CALENDAR

Registration days, July 16, 17, 1937.
Recitations begin July 19 and end September 9. Absences will be recorded against students registering after July 19.

CURRICULUM AND TUITION

Below is a list of the courses to be given and the tuition and fees for each course:

<table>
<thead>
<tr>
<th>Course</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch 1</td>
<td>$5.00 for each credit hour of work taken.</td>
</tr>
<tr>
<td>Chem 3, 4</td>
<td>$24.00</td>
</tr>
<tr>
<td>Chem 13</td>
<td>20.00</td>
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<tr>
<td>Chem 26</td>
<td>26.00</td>
</tr>
<tr>
<td>C. E. 21</td>
<td>11.00</td>
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<tr>
<td>C. E. 33</td>
<td>15.00</td>
</tr>
<tr>
<td>Dr. 9, 10</td>
<td>10.00</td>
</tr>
<tr>
<td>Dr. 25, 26</td>
<td>6.00</td>
</tr>
<tr>
<td>E. E. 2, 77</td>
<td>15.00</td>
</tr>
<tr>
<td>E. E. 3</td>
<td>8.50</td>
</tr>
<tr>
<td>E. E. 16, 78, 117</td>
<td>17.00</td>
</tr>
<tr>
<td>E. E. 188</td>
<td>25.00</td>
</tr>
<tr>
<td>Ec. 21, 51</td>
<td>15.00</td>
</tr>
<tr>
<td>Eng. 10 (Entrance English)</td>
<td>15.00</td>
</tr>
<tr>
<td>Eng. 11, 12, 33, 34, 45</td>
<td>15.00</td>
</tr>
<tr>
<td>Math. 1 (Entrance Geometry)</td>
<td>15.00</td>
</tr>
<tr>
<td>Math. 3 (Entrance Algebra)</td>
<td>15.00</td>
</tr>
<tr>
<td>Math. 17, 18, 23, 24</td>
<td>25.00</td>
</tr>
<tr>
<td>Math. 136</td>
<td>15.00</td>
</tr>
<tr>
<td>M. E. 14</td>
<td>5.00</td>
</tr>
<tr>
<td>M. E. 41, 37, 77, 44, 152, 155</td>
<td>15.00</td>
</tr>
<tr>
<td>M. E. 16, 43, 140, 148</td>
<td>10.00</td>
</tr>
<tr>
<td>M. E. 45, 46</td>
<td>8.00</td>
</tr>
<tr>
<td>M. E. 55</td>
<td>20.00</td>
</tr>
<tr>
<td>Mech. 31, 48</td>
<td>15.00</td>
</tr>
</tbody>
</table>
Mech. 39 ................................................................. 21.00
Mech. 40, 47.......................................................... 10.00
M. L. 8, 9, 14, 15, 16........................................... 15.00
Phys. 2 (Entrance Physics)..................................... 17.00
Phys. 21, 22, 25..................................................... 22.00
Phys. 23 ............................................................... 20.00
Phys. 24 ............................................................... 27.00
T. E. 23, 39............................................................ 5.00
T. E. 45 ............................................................... 15.00

No student will be permitted to take more than 11 credit hours of work during the summer session.

A medical fee of fifty cents must be paid by each student.

The fees and tuition are due on the day of registration and are to be paid to the school treasurer, F. K. Houston.

The school dining hall and Harris Dormitory will be open during the summer session. The room rent in Harris Dormitory will be two dollars per week for the eight weeks period. Application for room reservation should be addressed to the superintendent of dormitories.

Requests for information and applications for admission and special courses should be addressed to the Dean, Georgia School of Technology.

THE STATE ENGINEERING EXPERIMENT STATION

DIRECTOR, W. HARRY VAUGHAN


The State Engineering Experiment Station, located at The Georgia School of Technology, is the engineering research agency of the University System. The purposes of this unit are to serve the industry of this section, to develop the resources of the State, to aid in the integration of agricultural and industrial activities, and to provide support for research training in fundamental and applied science in the various institutions.

The Station is affiliated with the teaching organizations in order to promote the best interests of both research and teaching by placing research work in an academic atmosphere. This integration of research with scientific teaching provides a service for industry in the development of resources hitherto unavailable in the State, enlarges the teaching scope and perspective of college work, and utilizes efficiently and economically both the available equipment and the services of experts in different branches of science.

During the year 1936-37, sixteen Faculty Members, two Research Fellows, nine Research Graduate Assistants, one Research Scholar, two Student Assistants, and eight Technical Assistants were engaged, either full or part time in the prosecution of fifteen Station problems. These projects included such items as the more efficient processing of cotton in the mill, the processing of domestic flax by cotton mill methods, a new type of firebrick from Georgia kaolin, new compounds and products obtainable from gum-rosin and gum-turpentine, the refining of Georgia ocher, and the development of a new type of aircraft.

During June of each year a number of Research Graduate Assistantships and Scholarships carrying stipends up to $600.00 for ten months of part time work are awarded for the ensuing fiscal year. These opportunities are open on a competitive basis to qualified graduates of accredited technical institutions.

The results of Station investigations are made available to the public through the medium of bulletins and circulars published from time to time.

The Station is in a position to investigate problems financed by the State alone or in cooperation with industries, governmental bureaus, and technical foundations. Funds from external sources to finance cooperative investigations are administered in trust.
Atlanta, as a manufacturing center, has a large population of operatives, most of whom have been denied vocational training above the average standard due to faulty apprenticeship and financial necessity.

The courses of study have been established with two purposes: First, to give men who are employed, or who seek employment in some phase of engineering or industry, a chance to supplement their knowledge through evening study; second, to provide an opportunity for educational advancement for the high school student who finds it necessary to go to work.

While the courses are not as complete as those offered in a day college, the subjects offered furnish a good training in the elements of engineering. The student who receives a certificate in any of these courses is qualified for advancement in his life work.

Faculties

The faculty of the Evening School of Applied Science is composed of members of the day school faculty, with the following special instructors, who are specialists in their respective subjects.

Charles Thomas Baker 713 Glenn St., S.W.
Refrigeration

Henry H. Jordan 475 Clifton Rd., N.E.
Blue Print Reading and Estimating

James S. Morris 1931 Piedmont Rd., N.E.
Radio Service

Henry Lamar Reid 800 Myrtle St., N.E.
Radio Service

Fees

The admission fee for the various courses in the Evening School of Applied Science is dependent upon the number of hours scheduled per week. One dollar of the admission fee for any course is a registration fee which cannot be refunded.

A shop or laboratory fee is charged each student taking shop or laboratory work in order to cover cost of incidental supplies. The amount of this laboratory fee varies with the nature of the laboratory or shop work.

Projects that are constructed by the student become his property upon payment for materials used.

Calendar, 1937-38

Fall Term

Christmas vacation: Class work will continue through Friday night, December 17, 1937, and will be resumed Monday night, January 3, 1938.

Spring Term


Credit

The following regulations, concerning college subjects taken in the night classes, have been approved by the day school.

1. Final examinations shall be given in the Evening School of Applied Science in those subjects in which final examinations are given in the day school and a record of the term grades shall be kept by the Director. For a student to qualify for a day school examination in a subject, his term grade must be "C" or better.

2. Evening School of Applied Science students who are not in good standing in the day school, but upon whom requirements for being re-instated have been placed, may take day school examinations for credit if otherwise eligible. Students who are "excluded" will not be permitted to take the day school examinations.

Practically all subjects of the Freshman and Sophomore years are now available in the night classes. By this arrangement for credit, the night college credit courses are used advantageously by High School students and others who find it necessary to take up employment. Such students are able, during the period of employment, to pursue studies in the night school which may be credited toward a degree.

Courses of Instruction

A copy of the Evening School of Applied Science catalog, giving description of courses in detail, will be sent on request.

Two-Year Certificate Applied Science Courses

Admission to the following two-year certificate courses requires a high school education or some high school training with several years' experience.

These practical courses are designed for those men who are engaged in similar work during the day and who either have not had sufficient preparation to take one of the certificate courses, or wish a shorter course in some special subject. Elementary courses in algebra and geometry are desirable and available, but the student can begin the course without having had work in these subjects.


INDUSTRIAL EDUCATION

Professor T. H. Quigley

In conformity with the provisions of the Smith-Hughes Act, this department has the responsibility of training trade and related industrial teachers for the following types of schools and classes in the state of Georgia:

1. Evening classes in public schools and industrial plants.
2. All day public trade schools.
4. Foremanship courses.

The activities of the department include research to determine specific industrial education needs of a community, industry or plant, developing courses of study to meet these needs, selection of teachers of the required industrial experience, training these teachers for this specialized service; the development of specialized instructional materials for the use of such teachers; the training of local teacher trainers in the larger industrial centers; and the improvement of teachers in service after placement.

Because of the specialized local character of this extension work all activities are conducted under special arrangements between Georgia School of Technology, the Georgia State Board for Vocational Education, local boards of education and industrial plants. Courses and other activities are conducted at many points throughout the state. The courses offered are as follows:

EXTENSION WORK

Unless otherwise noted the following courses carry three hours credit:

I. E. 24. History of Education.
I. E. 27. Principles of Industrial Education.
I. E. 41. Methods of Teaching.
I. E. 43. Course Planning.
I. E. 45. Journal Reading.
I. E. 46. Lesson Planning.
I. E. 54. Shop Organization.
I. E. 71. Practice Teaching. Two hours credit.
I. E. 72. Practice Teaching.
I. E. 144. General School Organization.
I. E. 151. The Teaching of Related Subjects.
I. E. 156. Vocational Guidance.
I. E. 161. The Conducting of Foremanship Conferences.
I. E. 165. Organization of Trade Education.
I. E. 166. Organization of Part-time Education.
I. E. 167. Industrial Plant Surveys. Two hours credit.
I. E. 182. The Training of Industrial Teachers in Service.
I. E. 184. Trade Analysis.

SHORT SCHOOL FOR WATER PLANT OPERATORS

Prof. H. A. Wyckoff, Director

The Georgia School of Technology, in cooperation with the State Board of Health, conducts each year, usually in November, a Short School for Water and Sewage Plant Operators. The School, which lasts for four days, is conducted on the Tech campus and consists of lectures, laboratory classes and demonstrations intended to give information concerning modern theories and practices in water purification and sewage disposal. Trips for inspection are also made to near-by water and sewage plants. Instruction is given by professors chosen from the Tech faculty, members of the State Board of Health, and men prominent in related industries, who are specialists in their various fields.
GENERAL EXTENSION WORK

The University System of Georgia, under the direction of Prof. J. C. Wardlaw, offers numerous courses by correspondence and extension class instruction. As a member of the University System the Georgia School of Technology is co-operating in this important public service, the local supervising committee consisting of Professors T. H. Quigley (Chairman), Fred Ajax, and R. S. Howell. The work done by Georgia Tech is confined to extension class instruction, no correspondence courses being given.

MEDICAL ATTENDANCE

Dr. H. T. Compton, Miss Ida Marsh, and Miss Mable Simpkins

The Joseph Brown Whitehead Memorial Hospital has been in operation twenty-seven years; and the system instituted at its opening has been so successful in treating the sick and conserving the health of the student body, that a similar system will be in force during the coming year.

The School Surgeon is in charge of the Hospital and two registered nurses are in residence, thus insuring the very best care of the student in case of sickness. The hospital service gives any student who is temporarily ill all necessary medical treatment, without charge, by the School Surgeon, and necessary medicine and skillful nursing by the registered nurses. This does not apply to certain chronic cases, or to major surgical operations.

In case of illness of obscure diagnosis necessitating special examinations (X-Ray, Laboratory) a student will be removed to a private institution for such procedure. Parents will be notified and will be required to pay the costs incident to such hospital care.

A student becoming ill will be required to report to the hospital for treatment at the direction of the School Surgeon, unless attended by his own physician.

A student sick with diphtheria, scarlet fever, or smallpox, will be sent to the public hospital provided for those diseases.

A "Special Nurse" will be provided in those cases where the same is desired, at an additional fee covering the salary of the nurse and board. When consultation is required the student will pay the fee for consultation. A consulting staff is always available.

Students are charged twenty-five cents for each meal served in the hospital.

LIBRARY

Dr. A. V. Henry, Director; Mrs. James Henley Crosland, Librarian; Mary Minter and Carolyn Adams, Assistant Librarians

The library building, a gift of Mr. Andrew Carnegie, was formally opened in October, 1907. In 1932, two major improvements were made in the building. A new stack section which will house approximately 40,000 volumes was added and the basement renovated and made into a large, well-lighted Periodical Room.

The Library contains over 37,000 bound volumes and some 2,000 unbound pamphlets. The greater part of these which are scientific and technical are used for study and research. The Library subscribes to the journals of the leading scientific societies and to the foremost technical and scientific periodicals in this country and abroad. These, with over 3,000 bound periodicals, are kept in the new Periodical Room. There is an author, title, and subject catalogue for all books and periodicals in the general and departmental libraries.

There are four departmental libraries, all under the administration of the General Library. The more technical and highly specialized books are kept in these libraries. The departmental libraries are: Aeronautics, in the Daniel Guggenheim Building, opened in 1930; Architecture, on the third floor of the Physics Building, 1925; Ceramics, 1926, and Textile, 1929, in their respective buildings.

The Library was bequeathed a part of the collection of Mr. Julius Brown. This consists of some rare and fine old volumes dating back as early as 1473. A part of the collection of the late Governor N. E. Harris was bequeathed the Library. This contains some volumes on Southern history and literature.

The Library is primarily for the use of students and members of the faculty. All books, not reference or held on reserve, may be withdrawn for home use in accordance with the rules of the Library. The General Library is open from 8 A.M. to 9 P.M. each week day except Saturday when it closes at 12 M. It is closed on Sundays and regular school holidays. Printed Library Regulations are given the Freshmen at the beginning of the school year.

A library fee of $1.00 per term is paid by every student.
THE YOUNG MEN'S CHRISTIAN ASSOCIATION

BOARD OF DIRECTORS

George T. Marchmont ................................................Chairman
Dr. G. H. Boggs ..................................................Vice-Chairman
Prof. C. D. Gibson ................................................Secretary
Glenn W. Rainey Dr. Louie D. Newton
W. A. Alexander Dr. Herman L. Turner
George Winship Lewis F. Gordon

ADMINISTRATION

James W. May ...............................................General Secretary
William J. Proctor ................................................Executive Secretary
Miss Martha Hiers ..............................................Office Secretary
D. A. Howard ................................................Student Assistant

STUDENT OFFICERS, 1936-37

J. H. Williams, Jr. ................................................President
Pat Munroe ........................................................Vice-President
H. C. Tilford, Jr. ..................................................Secretary

Purpose: The purpose of the Young Men's Christian Association is to minister to the development of the moral, social and spiritual needs of each individual in the school community. There are few organizations on the campus that do not in some way come in contact with the Y. M. C. A.

"Y" Cabinet: Every student registered at Tech is a member of the Y. M. C. A. Any upper classman interested in taking an active part in the promotion of the Tech Y. M. C. A. program is invited to become a member of the Y. M. C. A. Cabinet. The Cabinet is organized into committees which supervise the various social and religious activities of the Association program. Only members of the Cabinet are eligible to be nominated and elected officers of the Y. M. C. A. The Cabinet calls for students with moral courage, students with a vision of a better world and a desire to join with other students to help make the Tech spirit the spirit of friendship and Christian brotherhood.

Freshman "Y" Council: The Freshman "Y" Council was founded in 1923. All freshmen registered at Tech are invited to become members. Under the direction of its own officers and committees the Council explores through discussion and social activities those areas of thinking and living which provide for the highest development of personality.

Services:

1. The General Secretary is available at all times for private conferences with students wishing to discuss in confidence their personal problems.

2. A directory of students, with name, address, telephone number, church preference and class, is kept on file in the "Y" office. This information is for the use of anyone desiring to get in touch with the students. The "Y" receives telephone calls from people of the city, and from out-of-town friends, and makes every effort to get these calls to students as promptly as possible.

3. The supervision and administration of the building and activities are under the direction of the secretaries. Quiet dormitory rooms on the third floor, with comfortable accommodations, are available to studentroomers at nominal charges. In the basement are offices for the student publications. The auditorium is used by the Tech Marionettes, alumni, Reserve Officers, young people's organizations of the churches, the "Y" Singers, and for class meetings, "pep" meetings, etc. The "Y" has a radio, reading room, and games in the lobby.

4. The school post office is located in the Y. M. C. A. building and is operated by the Y. M. C. A.

5. Three handball courts and a game room in the basement of the building are available for the recreation of students.

6. The Y. M. C. A. cooperates with the various churches near Tech in helping Tech students relate themselves to the programs of these churches.

7. Each year the Y. M. C. A. publishes the "T" Book—a neat, vest-pocket size book, containing information about all activities of the school, songs, yells, customs and traditions.

8. Through cooperation with the faculty and Tech Bible Classes, a reception is held for the freshmen.

9. The Y. M. C. A. attempts to help students find jobs.

10. In the reading room of the "Y" there are twenty-five of the best magazines and daily papers available for the students. There is a limited library of religious books in the lobby of the Y. M. C. A. Pamphlets on religion and religious questions are available at all times.
Activities:

1. During the spring of each year the annual Y. M. and Y. W. C. A. State Conference is held. Various problems confronting the different schools are discussed, along with topics of religious importance.

2. The Southern Student Y. M. and Y. W. C. A. Conference is held at Blue Ridge, N. C. Blue Ridge is a place for the student to learn what is most essential in college life, and to acquire that inspiration needed to live the fullest during his college year.

3. The Y. M. C. A. cooperates with the Athletic and Personnel Departments in undertaking a social and athletic, and in some respects a scholastic, program to involve the participation of every student at Tech. The Y. M. C. A. staff and student leaders are active in the initiation and direction of various features of the program. The building is always open to meetings, and the use of all its facilities, tangible and intangible, by students and their organizations is welcomed. Especially does the Y. M. C. A. concern itself with the interests of those students who are most likely to be neglected in the school program.

4. Through the cooperation of the Y. M. C. A. foreign students at Tech have organized the Cosmopolitan Club. Students from all countries are represented and take the leadership in promoting a program of activities to meet their own needs and interests.

5. In a series of discussion groups held by the Y. M. C. A. throughout the year various problems that confront college men are discussed. These groups are led by competent men who are selected from the faculty, upper classmen, and religious leaders in the city.

6. The best religious, scientific, and educational motion pictures available are shown at the Y. M. C. A. for the benefit of Tech students.

7. Under direction of the deputation committee groups of Tech students carry religious and educational programs to churches, colleges and young people's organizations in Atlanta and nearby communities.

8. Under leadership of a competent choral director the Tech "Y" Singers hold weekly rehearsals and give concerts before churches, schools and many other organizations in Atlanta. Several short trips to other cities are undertaken during the year.

THE STUDENT COUNCIL

The Student Council, which was put into operation in the fall of 1922, is a group of undergraduates elected by the student body. Its duties are to handle all matters of general student interest.

The officers and members for 1936-37 are:

G. H. HIGHTOWER, President  J. L. CHIVINGTON, Secretary
J. H. WILLIAMS, Vice-President  D. C. JOHNSTON, Treasurer

Seniors
G. H. HIGHTOWER  H. H. APPLEBY
D. C. JOHNSTON  R. A. BEARD
W. Y. C. DEAN  L. C. HAYS

Juniors
J. L. CHIVINGTON  J. P. MORGAN
W. H. JAMES  J. U. NIXON

Sophomores
R. E. ANDERSON  D. MUNFORD

Freshman
W. R. BEARD

Co-operative Representatives
J. M. CORRAL  G. E. BEVIS
P. J. MITCHELL  W. H. GARVIN

Ex-officio Members
J. C. McKINNON, Editor of Technique
J. H. WILLIAMS, President of Y.M.C.A.
H. W. SWIFT, President of Inter-Fraternity Council
GEORGIA TECH ATHLETIC ASSOCIATION

BOARD OF DIRECTORS

DR. M. L. BRITTAIR, Chairman.
DR. J. B. CRENSHAW.
DR. G. H. BOGGS.
DEAN W. V. SKILES.
PROF. A. H. ARMSTRONG, Faculty Chairman of Athletics and Business Manager.
PROF. FLOYD FIELD, Secretary and Treasurer.
COACH W. A. ALEXANDER, Advisory Member without vote.
MR. GEORGE W. MCCARTY.
MR. R. T. JONES, JR.
MR. OSCAR DAVIS.
G. H. HIGHTOWER, President of the Student Council.
J. C. MCKINNON, JR., Editor of the Technique.
J. M. FITZSIMONS, Captain of the Football Team.

COLLEGE ATHLETICS

College Athletics at the Georgia School of Technology are managed by a Board of Directors consisting of six members of the Faculty, appointed by the President, who is ex-officio chairman of the Board; three alumni appointed by the president of the school; the President of the Student Council, the captain of the football team, and the editor of the Technique. This board aims to secure co-operation of the faculty and students in athletic affairs, to maintain the highest standards of sportsmanship, to give every student an opportunity to take part in some athletic activity. The liberal policy adopted by the Faculty toward athletics has resulted in such interest in college sports that the number engaged in some form of outdoor exercise is very large—over fifty per cent—and is increasing yearly.

Intercollegiate schedules are played in football, baseball, basketball, tennis, swimming, fencing, and golf. Boxing and lacrosse are on the footing of intramural sports, but are increasing in interest among the students.

HUGH INMAN GRANT FIELD

The liberality of Mr. John W. Grant of Atlanta, whose donations for this purpose have reached the sum of fifty thousand dollars, aided by gifts from other friends of the institution, has provided the school with an athletic field 900 feet long and 450 feet wide. This field has been named the "Hugh Inman Grant Field" as a memorial to Mr. Grant's son.

STADIUM

Upon this field has been developed a splendid U-shaped stadium 410 feet in length with locker-rooms, bath-rooms, stock-rooms, coaches' offices and a running track under cover for early spring practice. The total seating capacity, with temporary wooden stands built in on the north end, is over 35,000. Grant Field, with its quarter mile track, its 220-yard straightaway, and this stadium, has been added to the equipment of the school at a cost of $350,000.

THE ROSE BOWL FIELD

In order to provide space for outdoor sports the Board of Directors of the Georgia Tech Athletic Association purchased at the close of the 1928 football season a new field 455 by 980 feet within three minutes walk of Grant Field. Thoroughly developed and equipped with a modern steel and concrete baseball stand, it provides space for two baseball fields, two football fields and a lacrosse field. To commemorate the victory over the University of California at Pasadena, New Year's Day, 1929, this field has been named "Rose Bowl Field."

THE NAVAL ARMORY

This new building, financed by funds from the C.W.A., the Georgia Tech Athletic Association, and Mr. Ferd M. Kaufman, an alumnus of the class of 1894, extends from the end of the East Stands along Techwood Drive to Third Street. It houses the Georgia Tech R.O.T.C. Naval Unit, the Atlanta Naval Reserve Unit, and the offices of the Georgia Tech Athletic Association. The main hall, on the ground floor, 196 feet long by 60 feet wide, is used for athletic practice and naval drill. The remaining space is occupied by lockers and showers, a fully equipped naval machine shop, target room, boiler-room for marine boilers, a radio room, store-room for naval supplies, a complete ship's bridge, and nine offices. The second floor, at the north end, gives six rooms for class work. Entrance to the building is on Third Street.

The Naval Armory satisfies a long-felt need in athletic and naval equipment at Georgia Tech.

THE AUDITORIUM-GYMNASIUM

This new building, now in process of construction at the north end of Grant Field, will cost when completed over $240,000, and will give the school a much needed assembly hall large enough for Commencement exercises, and also an up-to-date swimming pool. So far $93,000 has been spent. The building will probably be ready for use in the fall.
TECHNICAL SOCIETIES

AMERICAN SOCIETY OF CIVIL ENGINEERS
The Student Chapter of this organization at Georgia Tech is known as the "Civil Crew." Its members are selected from the Senior and Junior classes in Civil Engineering, with especial emphasis on good scholastic standing. The activities of the Society include the establishing of personal contact with practicing engineers by means of luncheons and informal talks, the investigation of practical construction work, and the showing of films on engineering projects.

ARCHITECTURAL SOCIETY
All Architectural students who have completed the first term of the Sophomore year are eligible for membership. Prominent local architects frequently address the monthly meetings. Prizes are offered for the best work in Design, and a creditable library of drawings from architectural books has been formed.

MECHANICAL ENGINEERING SOCIETY
This society is the student branch of the American Society of Mechanical Engineers with membership optional to students of both regular and co-operative Mechanical Engineering courses. Students interested in Mechanical Engineering, but specializing in other branches of engineering will be granted membership upon election by members of the branch. The society is conducted entirely by the students with the aid of an Honorary Chairman from the faculty of the Mechanical Engineering department, who is elected by the student members and approved by the president of the national society.

Weekly meetings of the society are conducted by the students, who either arrange programs from their own number or invite prominent engineers and business men of experience to address them. Special trips of inspection and an annual regional conference are features of the proceedings.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS
This national organization has chartered a student branch of the parent society at The Georgia School of Technology. Bi-monthly meetings take the form of lectures, motion pictures and plant visits which are meant to give the student a better idea of the function of the chemical engineer in modern industry.
LOAN FUNDS AND SCHOLARSHIPS

The Lewis H. Beck Fund

The Lewis H. Beck Scholarship Fund is a student loan fund created by the late Mr. Lewis H. Beck of Atlanta, for the benefit of students who are residents of Georgia, attending Georgia School of Technology. It is administered by a special Board of Trustees. For information write to the office of the Lewis H. Beck Scholarships, 53½ Baker Street, N.W., Atlanta, Ga.

The J. D. Rhodes Scholarships

The late J. D. Rhodes left one-third of the income of the Rhodes Building, Atlanta, for the purpose of educating boys at the Georgia School of Technology. The amount of money available each year will vary, as it depends on the rentals of the Rhodes Building.

The Adair and Oldknow Scholarships

Alumni of the School have established two Scholarships, to be known as the George W. Adair and William S. Oldknow Scholarships, in memory of these loyal Tech men, and on the same basis as the Rhodes Scholarships.

For information concerning the Rhodes, Adair and Oldknow Scholarships write Mr. G. C. Griffin, Assistant to the Dean of Men, Georgia School of Technology, Atlanta, Ga.

Generous friends of the institution have established funds of varying amounts, which are used for emergency loans.

Architects Loan Fund........................................... $ 200.00
J. Baldwin Loan Fund........................................... 50.00
Berry Loan Fund........................................... 2,400.00
S. F. Boykin Fund........................................... 100.00
J. B. Campbell Loan Fund........................................... 1,000.00
William B. Coleman Loan Fund........................................... 420.00
Holland Coleman, Jr., Loan Fund........................................... 300.00
S. C. Dobbs Loan Fund........................................... 75.00
Ga. Federation of Labor Loan Fund........................................... 800.00
The A. French Loan Fund........................................... 1,500.00
Mrs. A. V. Gude Loan Fund........................................... 200.00
Lyman Hall Loan Fund........................................... 1,400.00
J. M. High Loan Fund........................................... 850.00
Dr. and Mrs. T. P. Hinman Loan Fund........................................... 200.00
I. S. Hopkins Loan Fund........................................... 30.00
Louis Gholstin Johnson Loan Fund........................................... 400.00
Malta Lodge Loan Fund........................................... 800.00

Endowment Fund

Malta Lodge Fund, No. 2........................................... 250.00
Lona Mansfield Loan Fund........................................... 750.00
E. P. McBurney Loan Fund........................................... 10,475.00
Gayle Nimmocks Memorial (Pi Kappa Phi)........................................... 400.00
Scottish Rite Loan Fund........................................... 1,000.00
Sam W. Small Loan Fund........................................... 100.00
T. W. Smith Loan Fund........................................... 265.00
J. P. Stevens Loan Fund........................................... 5,000.00
Clark Thornton Memorial Fund........................................... 362.50
E. A. Turner Loan Fund........................................... 50.00
Mrs. Fannie B. Wright Loan Fund........................................... 925.00
Class of Dr. M. L. Brittain Loan Fund........................................... 500.00
Joseph M. Terrell Loan Fund........................................... 7,050.00
Geo. W. Adair Loan Fund........................................... 450.00
Thomas E. Mitchell Fund App. Annually........................................... 1,904.16
Student Emergency Loan Fund........................................... 3,500.00
Student Book and Supply Fund........................................... 1,800.00
Student fee loan fund........................................... 10,000.00
Student Supply Loan Fund........................................... 32,000.00
Lewis H. Beck Fund—Int. on $25,000 Annually........................................... 1,500.00
Lowry Loan Fund for North Ga. Students........................................... 3,000.00
Josiah Dana Cloudman Fund........................................... 10,000.00
Alice Spencer Coon Loan Fund for M. E. Students........................................... 4,000.00
Eugene O. Batson Scholarship Fund, Int. on........................................... 5,000.00

Applicants for loans must qualify in scholarship and character, besides presenting evidence of bona fide need of financial assistance.

Textile Scholarship

The Cotton Manufacturers' Association of Georgia has given to Textile students a scholarship of $120 for tuition and books, and a loan fund, not to exceed $200 annually.
MEDALS AND PRIZES

The President's Scholarship Prize: Gold "T"

Through the President of Georgia Tech, "Gold T's" are awarded each year to the members of the Junior class who, from the beginning of their courses have maintained the highest scholastic standing.

The Honor Society of Phi Kappa Phi

Among the prizes offered for scholarship by the Georgia School of Technology is membership in the honor society Phi Kappa Phi, to which a limited number of seniors representing all departments are elected annually. Phi Kappa Phi is a national organization with chapters in many of the leading universities and colleges, and wherever it has been established it has proved a stimulus not only to scholarships but to all-round manhood.

The local chapter of Phi Kappa Phi awards annually a scholarship cup to that member of the senior class who, on the basis of all work taken in this institution, ranks scholastically as one of the first two students in the class.

Tau Beta Pi

Tau Beta Pi is a national honorary engineering fraternity with chapters in most of the leading engineering schools of the country. The Alpha Chapter of Georgia offers membership to approximately twenty-five engineering students of each graduating class who can qualify according to standards of scholarship, character, loyalty, personality, leadership and school activities. The fact that Tau Beta Pi is the second oldest honorary fraternity in the country and numbers among its members many of our leading engineers, makes membership in the society a coveted honor.

The local chapter of Tau Beta Pi awards annually a scholarship cup to an outstanding engineering senior who ranks among the first five of his class, on the basis of all scholastic work taken in this institution. The selection is made by a committee composed of Tau Beta Pi faculty members, heads of the Engineering Departments, and a representative from the faculty Committee on Honors and Prizes.

Kappa Eta Kappa

Kappa Eta Kappa is a national professional electrical engineering fraternity. Membership in the Zeta chapter is offered to those junior and senior electrical engineering students possessing the requisite qualifications of scholarship, character, and leadership.

Phi Eta Sigma

Phi Eta Sigma is a freshman honor society in which any student is eligible for membership who has made an average grade of at least 3.5 on the work of the first term of the freshman year. The society awards a scholarship cup to the freshman who makes the highest average for the first term.

Textile Scholarship Medals

A medal is awarded by the National Association of Cotton Manufacturers to the Senior in the Textile Department who has the highest scholastic record from the beginning of the course.

The Cotton Manufacturers Association of Georgia awards a medal annually to a member of the Senior textile class, based on scholarship throughout his course, and for original effort in the work of the Textile Department during his Senior year.

Briarean Scholarship Cup

The Briarean Society of the Georgia School of Technology presents annually a scholarship cup to the member of the society who has attained the highest scholastic average for a period of four and one-half years.

Fraternity Scholarship Cup

The Inter-Fraternity Council awards annually a scholarship cup to the chapter of that organization which makes the highest scholastic average.

Architectural Medal and Prize

The American Institute of Architects awards each year to a member of the graduating class a medal for excellence in architecture. The winner of this medal, who must have a general scholastic average of at least "B", is recommended to the Committee on Honors and Prizes by the Faculty of the Department of Architecture.

A set of books is offered each year to the senior in Architecture placing first in a special competition. This prize is given by the Alumni and members of the Georgia Chapter of the American Institute of Architects.

Alpha Chi Sigma Prize

The Professional Chemical Fraternity, Alpha Chi Sigma, presents annually a set of books to the junior who has made the best record in the Chemistry or Chemical Engineering course.

A. I. Ch. E.

The Student Chapter of the American Institute of Chemical Engineers awards a badge and certificate to that sophomore in Chemical Engineering whose freshman record is highest.
Pi Tau Sigma

Pi Tau Sigma, National Mechanical Engineering Fraternity, elects to membership outstanding mechanical engineering students in the Junior and Senior years.

An annual award of an engineering handbook is made to the Sophomore mechanical engineering student who has attained the highest average on the basis of three terms' work.

Class Honor Rolls

Students who rank in the highest ten per cent of their respective classes are placed on the Honor Roll, which is shown in the catalog by printing the names of such students in italic type.

Military Prizes and Trophies

The A. B. Steele trophy, a handsome silver cup, the gift of Mrs. Ray Powers and Mr. A. B. Steele, as a memorial to those "Tech" men who made the supreme sacrifice during the World War, is awarded annually to the best drilled company in the regiment.

Gold, silver or bronze medals are awarded to students who achieve the highest individual excellence in military drill.

The Joseph Habersham Chapter of D. A. R. presents annually a medal to the member of the senior class who has made the highest rating in Military Science and Tactics.

Two silver cups are given annually by the Georgia Tech Athletic Association, one for the best drilled platoon and one for the best drilled squad.

The Scabbard and Blade Military Fraternity gives annually an officer's saber to the captain of the company which wins the Steele Trophy.

The Reserve Officers' Association of Atlanta gives annually an officer's saber to the most outstanding student in Military Science and Tactics.

Two gold medals are given annually by the Army Ordnance Association, one to the member of the Senior class and one to the member of the Junior class of the Ordnance unit achieving the highest rating in Ordnance Scholarship.

Naval R. O. T. C. Medals

The John Floyd Chapter of the Georgia Society of United States Daughters of 1812 awards a medal each year to the senior in the Naval R. O. T. C. who achieves the highest rating in Naval Science and Tactics. The Anak Society awards annually, two medals; one to the Junior in the Naval R. O. T. C. showing highest proficiency for the Course in Theoretical and Practical Navigation, the other to the Freshman in the Naval R. O. T. C. showing highest proficiency in Naval Science during his Freshman Year.

Degrees Conferred June, 1936

Graduate Degrees

Master of Science in Aeronautical Engineering
William Ben Johns, Jr.

Master of Science in Chemical Engineering
Edward Doud

Master of Science in Civil Engineering
Ludlow Vanderburg Clark Deichler

Master of Science in Electrical Engineering
Clure Halma Owen

Master of Science in Mechanical Engineering
Gaines Lamar Ball
Clair Almon Short, Jr.

Bachelor of Science in Mechanical Engineering
George Randall Hook (with honor)
Larry DuPre Montague (with honor)

Palmer Huffaker Awtrey
Thomas Berry, Jr.
James Cope Chambers
Carmine Domenick D'Onofrio
James Newton Felton
Antonio Cayetano Fraga
Clifford Charles Grommet
Myron Bowditch Hamilton
Chauncey Wolcott Huth
Harold Victor Lamberti
James Smith Mays
Walter Lee Mingledoff, Jr.
Ellwood Sterling Moorhead
Nicholas John Nichols
Frank Coney Pate

James Kirkpatrick Rankin
George Edward Rogers
Harold Hanes Rogers
Richard Miles Rowe
Leland Blackwood Salters, Jr.
Donald Bert Sargent
Gene Fielder Scarbrough
Adam Jones Transou
Thomas Poole Tumlin
Robert Emmons Walker
John Walter Ward, Jr.
DeWitt Andrews Worrell
Charles Walton Baird (1935)
Charles Theodore Levie (1935)
John Hecker Smith (1935)
Alexander Calhoun Todd, Jr. (1935)
Bachelor of Science in Electrical Engineering

James Goodwyn Brown (with honor)
Daniel Webster Hudgings III (with honor)
George Hudson Phillips (with honor)

Frederick Bruce Avery
James Guerry Bishop, Jr.
Alton Pearce Brinson
William Marshall Castleberry
Ernest Clinton Farmet
Thomas James Flynn
William Samuel Ginn
Frank Daniel Griesinger
James Guerry Bishop, Jr.
Aiton Pearce Brinson
William Marshall
Ernest Clinton Farmet
Thomas James Flynn
William Samuel Ginn
Frank Daniel Griesinger

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Elmore Hines Camp
Fred Leo Carothers
George William Evans
James Turner Fitten, Jr.
Juan Antonio Granados-Garcia
John Ford Howard
Fon Li
Frank Elwood Lindstrom

Richard Pearson Nelson
Demetrius Thomas Papageorge
James Marslowe Peterson
Lewis Rowe Samford, Jr.
Maurice Judson Sowell
Herbert Bruce Weaver
Fred Leon Coward (1935)
Willis Harris McClanahan, Jr. (1935)

Bachelor of Science in Textile Engineering

Benjamin Franklin Burnett, Jr.
Fletcher Sams Culpepper
Carl Raymond Cunningham, Jr.
George Walton Felker, III

Daniel Marshall Holsenbeck, Jr.
Hansford Sams, Jr.
James Walton Simmons, Jr.

Bachelor of Science in Chemical Engineering

Sam Thompson Gibson (with honor)
Frederick Schenck Barkalow, Jr.
Thomas Haden Riggs
Thomas Audley Maxwell

Ralph Buxton Cole, Jr. (with honor)
Fred Ward Cox, Jr. (with honor)
Vernon Everett Lyons (with honor)
Donald Burnett Salmon (with honor)

Morris Beerman
Frank Williams Chapman
Harvey Lewis Fell, Jr.
John Donald Gordon
Charles Adams Grace
John Frederick Hohmann
Robert Eugene Imhoff
Leon Sextus Kaniecki
Rayford Perdue Kytte, Jr.
Edgar Ernest Lindsey, Jr.
Charles Montgomery Lokey
David Meredith Luntz

Donald Burnett Salmon (with honor)

Conway Mizelle
Irwin Sherman Moore
Ward Hanson Sachs, Jr.
Rudolph Augustus Siegel, Jr.
Edwin Blashfield Turman
John Mason Williams, Jr.
John Schuler McKinney (1934)
Charles William Burdette (1935)
James Virgil McClanahan (1935)
Julius A. Parker (1935)
George Deavers Swanson (1935)
Thomas Morgan Turner, IV (1935)

Bachelor of Architecture

Arthur Neel Robinson, Jr.

Bachelor of Science in Architecture

Richard Leon Aec
James Lanier Doon
Albert Dawson Edwards
James Harrison Finch
John Andrew Houser, III
Willard Neal Lamberson
Richard Caswell Robert

Lyman Hall Robertson
William Irby Rosamond, Jr.
Harold Charles Rosenberg
Henry Sprott Long (1935)
Simon Walton Peabody (1935)
Eugene Davis Wilcox (1935)

Bachelor of Science in Chemical Engineering

(Co-operative Plan)

Frank Marshall Volberg (with honor)

Roy Gaskins
Algernon Protheroe Guess
William Weakley Howerton
Richard Anton Hrabe
Erik William Jordahn

Wilbur Barrett Ratterree
Hal Hazelton Strickland, Jr.
Calvin McMahone Tidwell
Louie David Wall, Jr.
Robert Aldean Wilson
BACHELOR OF SCIENCE IN CIVIL ENGINEERING
(Continued)

(Bachelor of Science (continued))

Henry Gray Crawford
James Franklin Darby, Jr.
Carlton Smith Dekle
Ernest Henry Emory
Marion Blanton Farmer
Andres Joaquín Fernandez-Morrell
Frederick Edward Fuchs
George Kitchens Harper
William Schley Heath
Leyton Bullock Hunter
Edwards Culver Kidd, Jr.
Jack Kinser
Gerald Edwin McDonald
John Elam McKinley, Jr.
Max Milligan, Jr.
Lonnie Allen Morris, Jr.
Harry Baker Overton
Arthur John Pekkonen

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING
(Continued)

(Bachelor of Science in Electrical Engineering)

Carol Towers Coffey (with honor)
Thomas Carlyle Moore, Jr. (with honor)
James Burton Batson
Thomas Screven Bond, Jr.
Aubrey Maynard Cary
Francis Lillard Dale
Philip Favour Dales
John Joseph Hill
Allen Talbert Hjelmfelt

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
(Continued)

(Bachelor of Science in Mechanical Engineering)

Julian Thornton Smith (with honor)
George Henry Braswell
Albert Neil Bray
James Thomas Carmical
Howard Mareen Duvall, Jr.

BACHELOR OF SCIENCE IN TEXTILE ENGINEERING
(Continued)

(Bachelor of Science in Textile Engineering)

Cecil Reese

BACHELOR OF SCIENCE IN COMMERCE

Walter Raymond Ringson (1934)
Julius Bartow Shuman, Jr. (1934)

BACHELOR OF SCIENCE IN CERAMIC ENGINEERING

Lamar Howard Franklin

BACHELOR OF SCIENCE IN AERONAUTICAL ENGINEERING

Wiley Pope Montgomery (with honor)
George August Smith (with honor)

BACHELOR OF SCIENCE IN INDUSTRIAL EDUCATION

Norman Carlos Smith (1933)

BACHELOR OF SCIENCE IN GENERAL ENGINEERING

James Leo Rifkin

Ralph Dunwoody Brown
Russell Lee Pirkle, Jr.
SCHOLASTIC HONORS AND PRIZES, 1936

**Phi Kappa Phi Senior Cup**—F. W. Cox, Jr.

**Tau Beta Pi Senior Cup**—R. B. Cole, Jr.

**Briarean Society Senior Cup**—J. T. Smith.

**American Institute of Architects, Medal**—J. L. Doom.

**Alpha Rho Chi Award**—J. H. Finch.

**Natl. Assoc. of Cotton Manufacturers, Medal**—D. M. Holsenbeck, Jr.

**Cotton Manufacturers of Georgia, Medal**—H. Sams, Jr.

**Alpha Chi Sigma, Award**—J. W. Clegg.

**Kappa Eta Kappa, Award**—E. M. Bolze.

**Pi Tau Sigma, Award**—R. J. Daniel.

**Am. Inst. Chem. Eng'r., Award**—P. J. Eldredge.

**Phi Eta Sigma Freshman Cup**—A. G. Rossow.

**Fraternity Scholarship Cup**—Kappa Sigma.


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ACCREDITED HIGH SCHOOLS, GEORGIA LIST, 1936

**NOTE**:—A star before the name of the school indicates that it has been placed on the Southern List of Accredited Schools as well as in Group I of the Georgia list. Group I represents the best schools in teaching staff, equipment of laboratory, library, and building. Group II represents those schools which do not meet all of the standards required for Group I.

Abbreviations: Ac., Academy; C., Consolidated; Co., County; Com., Commerce; H., High; In., Institute; Pr., Private; S., School; Sem., Seminary. The expression "High School" is understood where the name of the town only is given.

Schools for girls only are omitted from this list.

| Abbeville, I | Avera, II |
| Acworth, I | Avondale, I |
| Adairsville, II | Baconton, II |
| *Adel: Sparks-Adel, I | *Bainbridge, I |
| Adrian, I | Mt. Pleasant, II |
| Alamo: Wheeler Co., I | Pine Hill, II |
| *Albany, I | Baldwin, I |
| Alma, I | Barnesville: |
| Alpharetta, I | *Gordon In., I |
| Alphato, II | Barney, II |
| *Americus, I | Bartow, I |
| Anthony, I | Barwick, II |
| Appling: Leah, II | Baxley, I |
| *Arlington, I | *Blackshear, I |
| Arnoldsville, II | Blairsville, I |
| *Ashburn, I | Blakely, I |
| *Athens, I | Union H. S., II |
| Atlanta: | *Blythe, I |
| *Boys H. S., I | *Blue Ridge, I |
| Com. H. S., I | Bowdon, II |
| *Fulton H. S., I | Bowman, II |
| *Marist, Pr., I | Braselton, I |
| *N. Fulton, I | Bremen, I |
| Peacock S., Pr., II | Bridgeboro, I |
| *Tech H. S., I | Brinson, II |
| *Univ. S., Pr., I | Bronwood, II |
| Attapulgus, II | Bostwick, II |
| Augusta: | Bluffton, II |
| *Richmond Ac., I | Bogart, II |
| Austell, II | Bonaire, II |
| Barwick, II | Boston, I |

| Brooklet, I |
| *Brunswick: |
| Glynn Ac., I |
| Buchanan, II |
| Buena Vista: |
| Hoke Smith In., I |
| *Butler, I |
| Byromville, II |
| Byron, I |
| Cairo, I |
| *Calhoun, I |
| Sonoraville, II |
| *Camilla, I |
| Hopeful C. S., II |
| *Canton, I |
| *Carrollton, I |
| *Cartersville, I |
| Carnesville: |
| Franklin Co., I |
| Cave Spring C., I |
| *Cedartown, I |
| *Chamblee, I |
| Chatsworth, I |
| Chattanooga Valley, II |
| Chauncey, I |
| Chester, II |
| *Chickamauga, I |
| Chipley, I |
Clarkston, II
Clarksville, I
*Claston, I
*Clyattville C. S., II
*Cochran, I
*Cohutta, II
*Colbert, II
*College Park:
*Ga. Mil. Ac., Pr., I
*Collins, II
*Colquitt, I
*Columbus
*High School, I
*Ind. H. S., I
*Comer, II
*Commerce, I
*Concord, I
*Conyers, I
*Coolidge, II
*Cordele, I
*Cornelia, I
*Covington, I
*Livingston, II
*Crawford, II
*Crawfordville:
*Stephens In., I
*Cumming, II
*Cusseta, II
*Cuthbert, I
*Dacula, II
*Dahlonega, II
*Dallas, I
*Dalton, I
*Dawsonville, II
*Dawnville, II
*Damascus, II
*Danbury, II
*Danielsville:
*Madison Co., I
*Fort Gaines, I
*Franklin: Heard Co., II
Centralhatchee, II
Franklin Springs, II
*Gainesville, I
*Riverside Ac., Pr., I
Airline, II
Garfield, II
Gay-Oakland, II
Georgetown, II
Gibson, I
Gillsville, II
Girard, I
Glenville, I
Glenwood, II
Good Hope, II
Gordon, I
Gore, II
Grantville, I
Graves, I
Gray, I
Grayson, II
*Greensboro, I
*Greenville, I
*Griffin, I
*Spalding Co., I
*Guyton, I
*Hahira, I
*Hamilton, I
*Mount Hill, II
*Hampton, I
*Harlem, I
*Hartwell, I
*Hawkinsville, I
*Hazelhurst, I
*Hezibiah, I
*Hawassee:
*Townes Co., II
*Hinesville:
*Bradwell In., II
*Hilton C. S., II
*Hiram, II

*Hogansville, I
*Homer: Banks Co., II
*Homerville, I
*Hoffman, I
*Hull, I
*Jackson, I
*Jasper: Pickens Co., I
*Jaffin, II
*Jefferson: Martin In., I
*Jeffersonville:
*Twiggs Co., I
*Jersey, II
*Jesup: Wayne Co., I
*Jonesboro, I
*Kingsland, II
*Kite, II
*Kingsley, I
*LaFayette, I
*LaGrange, I
*Lake Mont, II
*Lakeland, Lanier Co., I
*Lakeland, II
*Lake Park, II
*Lavonia, I
*Lawrenceville, I
*Leesburg, I
*Leslie: Union, I
*Lexington:
*Meson Ac., II
*Lincolnton, I
*Lithonia, I
*Logansville, I
*Louisville, I
*Ludowici, I
*Lula, I
*Lumpkin:
*Stewart Co., I
*Lyerly H. S., II
*Lyons, I
*Macon:
*Manor Park In., Pr., I
*Macon, I
*Manor, I
*Mansfield, I
*Marietta, I
*Marlow, II
*Marshallville, II
*Mayesville, I
*Meigs, I
*Mentor, II
*Milledgeville:
*Ga. Mil. Coll., I
*Milledgeville:
*Milledgeville:
*Millen, I
*Milan, II
*Middlesboro:
*Midville, II
*Milan, II
*Milton, I
*Mildon, I
*Mullen, I
*Morgan, II
*Morganton, I
*Mathieson, I
*Mount Berry:
*The Berry S., Pr., I
*Mount Vernon: Brewton-Parker In., Pr., I
*Mount Zion, Pr., I
*Mystic, I
*Nahanta, II
*Nashville, I
*Naylor, II
*Nelson, I
*Nesbit, I
*Newton, II
*Nicholls, II
*Norcross, I
*Norman Park In., Pr., I
*Oak Park, II
*Oakwood, II
*Ochlocnec, I
*Osilla, I
*Oglethorpe, I
*Omega, II
*Oxford:
*Emory Ac., Pr., I
*Palmer-Stone, II
*Parrott, I
*Patterson, II
*Pavo, I
*Pearson, II
*Pelham, I
*Pembroke: Bryan Co., I
*Perry, I
*Pinehurst, II
*Pineview, I
*Pitts, I
*Plains, I
*Portal, II
*Powder Spgs., II
*Preston, II
*Pulaski, II
*Quinn, I
*Rabun Gap:
*Rabun-Gap-Nac., I
*Ray City, II
*Rebecca, II
*Register, II
*Reidsville, I
*Reynolds, I
*Rhine, II
*Richland, I
*Ringgold, II
*Robert, I
*Rochelle, I
*Rockmart, I
Statesboro, II
Rome, I
*Rome, I
*Darlington Ac., Pr., I
Model School, I
Roopville, II
Rossville, II
Lakeview H. S., II
Royston, I
Rutledge, II
Sale City, II
Sandersville, I
Sardis, I
Sasser, I
Sautee:
  Nac. Valley, II
*Savannah, I
*Benedictine, Pr., I
Screven, II
Senoia, I
*Shellman, I
Shiloh, II
Smithville, I
Smyrna, I
Snellville, II
Social Circle, I
Soperton, II
Sparta, I
Springfield:
  Effingham Ac., I
Stapleton, I
*Statesboro, I
Statham, II
Stilmore, I
Stilson, II
Stone Mountain, I
*Summerville, I
Summit:
  Emanuel Co., I
Savannah, I
Wadley, I
Walessa:
  Reinhardt Ac., Pr., I
Walker Park:
  Voc. and Tr. S., II
Walker:
  Vo.
Walesboro, II
*Warrenton, I
Warwick, I
*Washington, I
Watkinsville, I
Waverly Hall, II
*Waycross, I
Wacona, II
*Waynesboro, I
Ways C. S., II
Weston, II
*West Point, I
Whigham, II
Willacoochee, II
*Winder, I
Woodbine, I
Woodbury:
  *Meriwether Co., I
Woodcliff:
  Bay Branch H. S.
Woodland, II
*Wrens, I
Wrightsville, I
Yatesville, II
*Young Harris, Ac., Pr., I
Zebulon, I
Vidette, I
Vienna, II
Villa Rica, I
Vienna, I
Villa Rica, I
Vienna, I
Villa Rica, I
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GEORGIA SCHOOL OF TECHNOLOGY

SUMMARY OF ENROLLMENT

Graduate Students .................. 25
Carried forward .................. 2098
Students .................. 295
Evening School .................. 845
Juniors .......................... 412
Pre-Juniors .................. 127
Sophomores .................. 551
Total .................. 3304
Freshmen .................. 676
Irregular .................. 12
Less duplicates .................. 356

Total College Day Courses, 2098
Total Net Enrollment .................. 2948

ENROLLMENT BY MAJOR DEPARTMENTS

(Collegiate Day Courses)

Aero Engineering .................. 74
General Engineering .................. 12
Architecture .................. 75
Industrial Management .................. 224
Ceramics .................. 11
Mechanical Engineering .................. 289
Civil Engineering .................. 114
Textile Engineering .................. 109
Chemical Engineering .................. 173
General Science .................. 50
Chemistry .................. 24
Unclassified .................. 714
Electrical Engineering .................. 229

Total .................. 2098

PROFESSION OR OCCUPATION OF PARENTS OF STUDENTS

IN COLLEGE DAY COURSES

Merchants .................. 356
Contractors .................. 68
Farmers .................. 161
Govt. Employees .................. 135
Manufacturers .................. 103
Insurance Agents .................. 44
Salesmen .................. 141
Ministers .................. 31
Rwy. and Tel. Employees .................. 165
Accountants .................. 88
Physicians and Dentists .................. 73
Teachers .................. 41
Public Officers .................. 51
Newspaper Men .................. 35
Engineers and Architects .................. 119
Skilled Laborers .................. 145
Bankers .................. 51
Miscellaneous .................. 84
Lawyers .................. 59
Not Stated .................. 100
Real Estate .................. 48

Total .................. 2098
### GRADUATES BY DEPARTMENTS AND BY YEARS

<table>
<thead>
<tr>
<th>DEGREE</th>
<th>1890</th>
<th>1899</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
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### NOTES:
The M.S. Degrees, Professional Degrees, and Certificates shown above are distributed among the departments as follows:

2. Professional Degrees: C.E., 12; Ch. E., 1; E.E., 7; M.E., 11; T.E., 1.
3. Certificates: Arc., 43; C.S., 38; I.E., 1; M.T.C., 14; M.T., 1; T.E., 189.

### ABBREVIATIONS:

- A.E.—Aeronautical; Cer.—Ceramic; Ch. E.—Chemical; C.E.—Civil; E.E.—Electrical; G.E.—General; M.E.—Mechanical; T.E.—Textile Engineering; Arc.—Architecture; Chem.—Chemistry; Com.—Commerce; B.C.S.—Commercial Science; G.S.—General Science; I.E.—Industrial Education; M.T.C.—Motor Transport; M.T.—Manual Training.

*Dates in this column show the year when the degree was first conferred.
†This degree was not given from 1929 to 1935.
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UNIVERSITY SYSTEM OF GEORGIA

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BULLETIN

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ATLANTA, GEORGIA

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