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Volume XXXV April, 1938 Number 1

GEORGIA SCHOOL OF TECHNOLOGY

ATLANTA, GEORGIA

A SCHOOL OF AERONAUTICAL, ARCHITECTURAL, CERAMIC, CHEMICAL, CIVIL, ELECTRICAL, GENERAL, MECHANICAL AND TEXTILE ENGINEERING; ARCHITECTURE, CHEMISTRY, AND INDUSTRIAL MANAGEMENT

REGISTER OF FACULTY AND STUDENTS, 1937-1938

ANNOUNCEMENTS, 1938-1939

CALENDAR, 1938-1939

1938	July 5	—Co-op Dept. Section I begins first term.
	July 15-6	—Registration for Summer School.
	July 18	—Summer School classes begin.
	Sept. 9-16	—Examinations: Summer School, Entrance, and Re-examinations.
	Sept. 13	—Registration of regular freshmen.
	Sept. 14-17	—Freshman Orientation, Physical Examination, and Registration of former students.
	Sept. 19	—Class work for first semester begins.
	Sept. 26	—Co-op Department Section II begins first term.
	Oct. 7-8	—Semi-Centennial Exercises.
	Nov. 24-26	—Thanksgiving Holidays.
1939	Dec. 20 (4 P.M.) to Jan. 3 (8 A.M.)	—Christmas Holidays.
	Jan. 3	—Co-op Department Section I begins second term.
	Jan. 23-Feb. 1	—Examinations for first semester. Registration for second semester.
	Feb. 2 (8 A.M.)	—Class work for second semester begins.
	March 20	—Co-op Department Section II begins second term.
	Apr. 7-8	—Easter Holidays.
	May 18	—Senior final examinations begin.
	May 27	—Regular second semester examinations begin.
	June 5	—Commencement Day.
	July 17	—Summer School classes begin.

TABLE OF CONTENTS

	PAGE
Board of Regents	4
Standing Committees	5
Officers of Administration	6
Faculty	9
General Information and Regulations	21
Departments	32
Graduate Courses	163
Summer School, Experiment Station and Extension Work	177
Organizations	186
Scholarships, Medals, and Prizes	195
Degrees Conferred	201
Accredited High Schools	207
Register of Students	211

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STEADMAN VINCENT SANFORD, *Chancellor*

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Concurrently with the Governor.

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Term Expires July 1, 1939

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Term Expires July 1, 1941

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Term Expires July 1, 1943

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Term Expires July 1, 1941

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Term Expires July 1, 1943

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Term Expires July 1, 1941

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Term Expires July 1, 1941

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Term Expires July 1, 1943

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Term Expires July 1, 1939

ABIT NIX, Athens, Georgia, Tenth District
Term Expires July 1, 1943

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Term Expires July 1, 1940

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Term Expires July 1, 1942

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Term Expires July 1, 1940

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Term Expires July 1, 1942

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W. WILSON NOYES, *Treasurer*, State Capitol, Atlanta, Ga.

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

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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, BOGGS, AND FIELD.

Experiment Station—KNIGHT, SAVANT, HENRY, ALFRED W. SCOTT, C. A. JONES, BUNGER, FRIEDMAN, AND VAUGHAN.

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.

Public Safety and Sanitation—MASON, FITZGERALD, SNOW, AND GAILEY.

Publications—D. M. SMITH, MCDANIEL, AND HOWELL.

Radio—GIBSON, COX, FRIEDMAN, AND J. A. GRIFFIN.

Schedules—SKILES, STAMY, AND SAVANT.

Standing—SKILES, BOGGS, AND SAVANT.

Student Supply Appointments—CALDWELL, KING, AND FITZGERALD.

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Assistant Professor of Mathematics

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*Resigned.

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Professor of Chemistry

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Instructor in Aeronautical Engineering

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Instructor in Mechanical Engineering

Benjamin Blackiston Wroth, Ph.D. 190 Fifth St., N.W.
Professor of Chemistry

Hugh Allen Wyckoff, B.S., M.S. 3201 W. Shadow Lawn
Professor of Biology and Head of the Department

*Leave of Absence 1938-39.

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C. C. Grommet, B.S. in M.E. Tech Campus
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C. B. Holder, A.B. 130 Techwood Dormitory
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L. K. Yourtee, B.S. 137 Techwood Dormitory
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L. J. Harris ..... *Physics*

T. B. Caulfield ..... *Physics*

A. C. Rossow ..... *Physics*

M. G. Mitchell ..... *Physics*

C. V. Johnson ..... *Geology*

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.
Staff Sergeant D. S. Parchman (D.E.M.L.)

COAST ARTILLERY CORPS

Major Wm. D. Evans, C.A.C.
Unit Commander

Assistants

Captain Fred B. Waters, C.A.C.
Captain Howard H. Newman, C.A.C.
Sergeant E. G. Patrick (D.E.M.L.)

SIGNAL CORPS

Major Evan D. Cameron, Sig. C.
Unit Commander

Assistants

Captain George L. Richon, S.C.
Sergeant Dick Weir (D.E.M.L.)

ORDNANCE

Captain Edward C. Franklin, O.D.
Unit Commander
Sergeant Charles H. Weese, (D.E.M.L.)

DEPARTMENT OF NAVAL SCIENCE AND TACTICS

Reserve Officers' Training Corps

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. ODEN, 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 ANHEIR, C.Y., U.S.N.R.
THOMAS A. HOWARD, C.S.K., U.S.N.R.

NOTE: Lieutenant Commander Paul R. Coloney, U.S.N., has been ordered as relief of Lieutenant Carter in July 1938. Lieutenant Commander Wyatt Craig, U.S.N., has been ordered as relief of Lieutenant Oden in July 1938.

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 shop buildings destroyed by fire were replaced in 1891, and at present there are on the campus the following:

		Completed
Academic Building	1888	$ 80,000
Old Shop Building	1892	40,000
Knowles Dormitory	1898	55,000
Textile Building	1898	60,000
Swann Building	1900	60,000
Electrical Building	1901	50,000
President's House	1903	15,000
The Lyman Hall Laboratory	1906	50,000
Carnegie Building	1906	30,000
Whitehead Memorial Hospital	1910	30,000
Y. M. C. A. Building	1911	80,000
Power Plant	1914	80,000
Military Building	1917	10,000
Automobile Building	1918	5,000
Mechanical Building	1920	190,000
Physics Building	1923	225,000
Ceramics Building	1924	35,000
Julius Brown Memorial Hall	1925	85,000
Grant Field Stadium	1925	300,000
Emerson Addition to Chemistry Building	1925	100,000

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 (in part)	1937	93,000
Civil Engineering Building	1938	150,000
Engineering Drawing Building	1938	130,000

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 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 it is believed will 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. George W. Harrison, Jr., left by Will $16,000 which is invested in the purchase of two lots near the campus and in improvement of the Ceramic Building.

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

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

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.

To succeed him, the Trustees elected Dr. K. G. Matheson, who was then Professor of English at Georgia Tech. Dr. Matheson continued as president until April 1, 1922, when he resigned to become president of Drexel Institute in Philadelphia.

Mr. N. P. Pratt, Chairman of the Executive Committee of the Board of Trustees, served as Administrative Executive Ad Interim for four month, until the Board elected Dr. M. L. Brittain as President, effective August 1, 1922.

Governor N. E. Harris served as chairman of the Board of Trustees until his death, September 21, 1929. Other trustees besides the four already mentioned on the first commission who have rendered service are: D. N. Speer, W. B. Miles, George Winship, George W. Parrott, Walter M. Kelley, N. P. Pratt, Hal G. Nowell, E. R. Hodgson, Sr., and Jr., George G. Crawford, L. W. Robert, Jr., Floyd Furlow, E. R. Black, Harrison J. Baldwin, J. S. Akers, John W. Grant, George H. Carswell, W. H. Glenn, John H. Porter, Frank Freeman, G. M. Stout, Harrison Hightower and John S. Cohen. Besides these regular members, there were three ex-officio trustees appointed each by the Chairman of the Board of Trustees of the University of Georgia, and in addition the Governor and State Superintendent of Schools served ex-officio. On January 1, 1932, all State boards of Georgia State Colleges were abolished and the following now compose the State Board of Regents for the entire University System:

John G. Kennedy, J. D. Gardner, Jere N. Moore, Marvin Twiggs, George C. Woodruff, Cason Callaway, Clark Howell, Jr., John W. Bennett, Sandy Beavers, Abit Nix, Marion Smith, George Haines, Jack Lance, Dr. J. Knox Gholston, L. W. Robert, Jr., and Governor E. D. Rivers.

COURSES AND DEGREES

During the first eight years of its history the Georgia School of Technology offered one course of study leading to the degree of Bachelor of Science in Mechanical Engineering. From time to time other courses have been added, and at present the following degrees are granted, the figures giving the year when each course was established:

Bachelor of Science in Mechanical Engineering	1888
Bachelor of Science in Electrical Engineering	1896

Bachelor of Science in Civil Engineering....1896
Bachelor of Science in Textile Engineering....1899
Bachelor of Science in Chemical Engineering....1901
Bachelor of Science in Chemistry....1906
Bachelor of Science in Architecture....1908
Bachelor of Science in Engineering Courses, Co-operative Plan, 1912
Master of Science....1922
Bachelor of Science....1923
Bachelor of Science in Ceramic Engineering....1924
Bachelor of Science in Aeronautical Engineering....1930
Bachelor of Science (General Engineering)....1934
Bachelor of Architecture....1934
Bachelor of Science (Industrial Management)....1934

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 13, 1938.

All freshmen are required to take placement tests in English, Mathematics, Science, and Social Science. This work begins 8 a. m. on Wednesday, September 14, 1938, 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 reject or to require entrance examinations of any applicant whose record indicates that he is not adequately prepared to do college work. Non-residents of Georgia, who rank in the lower third of their classes, are not eligible to take the examinations. Entrance 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.)

English	3	History	1
Algebra	2	†Physics	1
Plane Geometry*	1	Optional Units, at least	7

*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

English	1	Biology	½ to 1
Sol. Geometry	½	Chemistry	½ to 1
Trigonometry	½	Gen. Science	½ to 1
Adv. Arithmetic	½	Physiography	½ to 1
Hist. & Civics	1 to 3	Physiology	½ to 1
Economics	½ to 1	Drawing	½ to 2
Latin or Greek	1 to 4	Commerce	1 to 3
Ger. French or Span.	1 to 3	Shop Work	½ to 2
Bible	½ to 1	Agriculture	1 to 2
		Military	½ to 1

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.

Admission with Advanced Standing

Applicants who have made satisfactory records in scholarships and in conduct in other accredited colleges may enter with advanced standing

provided the subjects satisfactorily passed cover in time and content certain of the required subjects in the courses which they expect to enter at Georgia School of Technology. Such students, especially those from colleges of arts and sciences, are notified that in transferring to a technical course they will lose some of their credit hours. No definite statement of advanced standing can be given until an official transcript is received from the Registrar of the institution previously attended. A catalog of the institution must be sent with the transcript. Ordinarily an applicant who has less than a "C" average is not accepted. A student who has been dropped from another college for failure in his studies or for misconduct cannot be admitted. First year transfer students who are rated here as freshmen may be required to live for one year in one of the college dormitories.

Transfers from other colleges with sixty or more hours of credit will not be required to take the basic course in R. O. T. C. but for graduation will be required to present six credit hours to cover the two-year basic course in Military.

Tuition and Fees

All checks for fees, board, or other deposits should be made payable to the Georgia School of Technology and mailed to F. K. Houston, Treasurer.

By a law of the State, the fees for each term must be paid in advance before the day on which the term opens. *To qualify for Georgia tuition the student's parents must be legal and actual residents of Georgia.* The fees for 1938-39 are:

For students whose parents are legal residents of Georgia:

	1st Term	2nd Term
Tuition	$50.00	$50.00
Student Activities Fee	11.00	10.50
Deposit for Laboratories, etc.	10.00	
Medical Fee	2.00	
Total charges	$73.00	$60.50*

For students whose parents are not legal residents of Georgia:

	1st Term	2nd Term
Tuition	$100.00	$100.00
Student Activities Fee	11.00	10.50
Deposit for Laboratories, etc.	10.00	
Medical Fee	2.00	
Total charges	$123.00	$110.50*

* 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 co-operative courses should consult the bulletin issued by that department.

	Low	High
Tuition and Fees	$ 73.00	$ 73.00
Board, Room and Laundry	135.00	175.00
Uniform	27.50	27,50
Books and Equipment	20.00	35.00
Total for First Term	$255.50	$310.50

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 1938-39 the examinations will be held from Wednesday, September 14, through Saturday, September 17.

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 $27.50 which amount must be paid to the Treasurer by every new freshman or sophomore. This deposit will be refunded to those exempted from military. 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 $13.00 up.

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.

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 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 by August 15th 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 are advised to purchase meal ticket books, $22.50 for $20.00 or $11.00 for $10.00.

Laundry

Laundry is handled by contract. The student receives a discount 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 the company holding contract.

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, ASSISTANT PROFESSORS MILLS AND SCHWARTZ,
INSTRUCTOR WEEMS, ASSISTANT POPE, AND 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 offers three alternatives to prospective students.*

1. Students may take the five basic aeronautical courses, A. E. 131, 133, 134, 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 113.

2. 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 study. This broad training in Aeronautical Engineering will enable the student to qualify in the design and manufacture of aircraft and aeronautical accessories.

3. 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

*For Senior curriculum, class of 1939, see Catalogue of April, 1937.

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 164 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, an instrument laboratory, and a laboratory for the testing of high speed blowers. 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.

FIFTH YEAR COURSE IN AERONAUTICAL ENGINEERING

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
A. E.	131	[1]Aerodynamics of the Airplane	5		5
A. E.	133	[1]Theory of Aircraft Structures I	3		3
A. E.	141	[1]Airplane Design I		9	3
A. E.	145	Seminar	1		1
A. E.	155	Aircraft Structural Laboratory		3	1
A. E.	157	Wind Tunnel Laboratory I		3	1
A. E.	163	Aeronautical Instrumentation	3		3
		Total	12	15	17

Second Term

A. E.	134	[1]Theory of Aircraft Structures II	3		3
A. E.	142	[1]Airplane Design II		9	3
A. E.	146	Seminar	1		1
A. E.	152	Dynamics of the Airplane	3		3
A. E.	148	[2]Airplane Detail Design			
A. E.	158	[2]Wind Tunnel Laboratory II		3	1
A. E.	164	[2]Aircraft Instrument Laboratory			
A. E.	166	Propeller Design	1	3	2
M. E.	186	Aeronautical Engines	3		3
M. E.	94	Aeronautical Engine Laboratory		3	1
		Total	11	18	17

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

[2]Note: 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.

A. E. 131. Aerodynamics of the Airplane. Prerequisites: Math 136, Phys. 25.

Senior 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. 133-134. Theory of Aircraft Structures I-II. Prerequisites: Mech. 40, 48.

Senior G. E. and Fifth Year A. E., first and second terms 3-0-3.

Development of the basic theory of structural analysis progressing through the methods of analysis for complex structures including those of the monococque type.

A. E. 141-142. Airplane Design I-II. Prerequisites: Mech. 40, 48. Parallels A. E. 131, 133, and 134.

Senior G. E. and Fifth Year A. E., first and second terms, 0-9-3.

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.

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.

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.

Fifth Year A. E., second term, 3-0-3.

Mathematical study of dynamic stability and certain special maneuvers such as the spin.

A. E. 155. Aircraft Structural Laboratory. Prerequisites: Mech. 40, 48. Parallels A. E. 133.

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.

A. E. 157. Wind Tunnel Laboratory I. Prerequisites: Math. 24, Phys. 25. Parallels A. E. 131.

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.

Fifth Year A. E., second term, 0-3-1.

Study of special wind tunnel problems for students interested in aerodynamic research.

A. E. 163. Aeronautical Instrumentation. Prerequisites: Math 136, Phys. 25. Parallels A. E. 131.

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.

Study of the performance of aeronautical instruments under operating conditions.

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 164 in this catalogue.

DEPARTMENT OF ARCHITECTURE

Professors Bush-Brown and Gailey; Associate Professors Morenus and Rowland*; Assistant Professors Siegler and Jorgensen; Advanced Design Critic Ollivier J. Vinour and Instructor Julian H. Harris

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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.

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*Resigned

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* (3 yrs. 22 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 term, 2 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

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	1	Introduction to Architecture	2	3	3
Eng.	11	Composition and Rhetoric	3		3
Math.	17	Elementary Functions	5	1	5
M. L.		French or German	3		3
S. S.	11	Social Science	3		3
R.O.T.C.	1	Military or Naval Instruction		5	1.5
Or.		Orientation	1		
		Total	17	9	18.5

Second Term

Arch.	2	Introduction to Architecture	1	6	3
Eng.	12	Composition and Rhetoric	3		3
Math.	18	Analytic Geometry	5	1	5
M. L.		French or German	3		3
S. S.	12	Social Science	3		3
R.O.T.C.	2	Military or Naval Instruction		5	1.5
		Total	15	12	18.5

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)

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	9a	Freehand Drawing		3	1
Arch.	11a	Architectural Design (elementary)	1	12	5
Arch.	13	Graphics—Shades and Shadows	1	4	2.5
Eng.	33	Humanities	3		3
Phys.	21	Physics	3	3	4
R.O.T.C.	3	Military or Naval Instruction		5	1.5
		Total	8	27	17

Second Term

Arch.	9b	Freehand Drawing		3	1
Arch.	11b	Architectural Design (elementary)	1	12	5
Arch.	14	Graphics—Perspective	1	4	2.5
Eng.	34	Humanities	3		3
Phys.	22	Physics	3	3	4
R.O.T.C.	4	Military or Naval Instruction		5	1.5
		Total	8	27	17

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)

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	9c	Freehand Drawing		3	1
Arch.	11c	Architectural Design (intermediate)	1	16	6
Arch.	15a	History of Architecture	3		2.5
Arch.	30a	Construction—Building Materials	2		2
Ec.	24	Economics	3		3
		Elective: Government or English	3		3
		Total	12	19	17.5

Second Term

Arch.	9d	Freehand Drawing		3	1
Arch.	11d	Architectural Design (intermediate)	1	16	6
Arch.	15b	History of Architecture	3		2.5
Arch.	30b	Construction—Building Materials	2		2
Mech.	42	Mechanics of Materials	3		3
		Elective: Public Speaking or Economics 32	3		3
		Total	12	19	17.5

SENIOR YEAR (Option No. 1—Architectural Design)

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	9e	Freehand Drawing		3	1
Arch.	11e	Architectural Design (intermediate)	1	16	6
Arch.	15c	History of Architecture	3		2.5
Arch.	33	Construction—Wood	3	3	4
Arch.	83	Water Color		3	1
M. E.	69	The Mechanical Plant	2		2
		Total	9	25	16.5

Second Term

Arch.	9f	Freehand Drawing		3	1
Arch.	11f	Architectural Design (intermediate)	1	16	6
Arch.	15d	History of Architecture	3		2.5
Arch.	34	Construction—Steel	3	3	4
Arch.	84	Water Color		3	1
E. E.	56	The Mechanical Plant (electricity)	1		1
		Elective	2		2
		Total	10	25	17.5

FIFTH YEAR (Option No. 1—Architectural Design)

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	65	Professional Practice	2		2
Arch.	109a	Freehand Drawing (life)		4	1.5
Arch.	111a	Architectural Design (advanced)	1	21	8
C. E.	71	Construction (reinforced concrete)	1	3	2
		Architectural Electives	2	3	3
		Total	6	31	16.5

Second Term

Arch.	109b	Freehand Drawing (life)		4	1.5
Arch.	111b	Architectural Design (advanced)	1	21	8
		Architectural Electives	2	3	3
		Elective: Accounting, Business or Law	3		3
C. E.	72	Construction (reinforced concrete)	1	3	2
		Total	7	31	17.5

ARCHITECTURAL ELECTIVES:

Arch.	81	Landscape Architecture	2		2
Arch.	77 & 78	Pen and Ink		4	1.5
Arch.	70	History of Art	2		2
Arch.	71 & 72	Modeling	1	3	2
Arch.	79 & 80	Pencil Drawing		4	1.5
Phys.	40	Acoustics and Illumination	2		2

SOPHOMORE YEAR (Option No. 2—Architectural Engineering)

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	13	Graphics	1	4	2.5
Arch.	30a	Construction—Building Materials	2		2
Eng.	33	Humanities	3		3
Math.	23	Calculus	5		5
Phys.	21	Physics	3	3	4
R.O.T.C.	3	Military or Naval Instruction		5	1.5
		Total	14	12	18

Second Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	14	Graphics	1	4	2.5
Arch.	30b	Construction—Building Materials	2		2
Eng.	34	Humanities	3		3
Math.	24	Calculus	5		5
Phys.	22	Physics	3	3	4
R.O.T.C.	4	Military or Naval Instruction		5	1.5
		Total	14	12	18

JUNIOR YEAR (Option No. 2—Architectural Engineering)

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	6a	Design and Working Drawings	1	12	5
Arch.	9a	Freehand Drawing		3	1
Arch.	57	History: General Survey	2		2
C. E.	21	Plane Surveying	1	3	2
Ec.	24	Economics	3		3
Mech.	33	Applied Mechanics	3	3	4
		Total	10	21	17

Second Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	6b	Design and Working Drawings	1	12	5
Arch.	9b	Freehand Drawing		3	1
Arch.	46	Construction—Wood and Masonry	3		3
Arch.	58	History: General Survey	2		2
Ec.	32	Economics	3		3
Mech.	36	Applied Mechanics	2		2
		Elective	2		2
		Total	13	15	18

SENIOR YEAR (Option No. 2—Architectural Engineering)

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	6c	Design and Construction	1	16	6
Arch.	47	Construction—Steel	3		3
Arch.	51	Office Practice	2		2
Ec.	51	Government	3		3
M. E.	57	Materials Lab.	1	3	1.3
M. E.	69	The Mechanical Plant (Plumbing and Heating)	2		2
		Total	12	19	17.3

Second Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Arch.	6d	Design and Construction	1	16	6
Arch.	52	Office Practice	2		2
C. E.	74	Construction—Concrete	3	3	4
E. E.	56	The Mechanical Plant (Electrical)	1		1
Eng.	45	Public Speaking	3		3
		Total	10	19	16

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 of various subject matter, including outdoor sketching.

ARCH. 11. ARCHITECTURAL DESIGN.

11a, 11b,—Sophomore (Elementary) 1-12-5.

11c, 11d, 11e, 11f,—Junior and Senior (Intermediate) 1-16-6.

111a, 111b,—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 five or 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. 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 class room 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.

Text: Young and Baxter, Mechanics of Materials. Hauf, Design of Steel Buildings.

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. 57 and 58. ELEMENTARY SURVEY OF ARCHITECTURE.

Juniors or Seniors, first and second term, 2-0-2.

This course is given for men taking option No. 2 and for those not pursuing a professional course in Architecture. It covers in outline the historic styles down to and including the present, and is intended to familiarize the student with architectural form and give him an elementary understanding of the principles of design.

ARCH. 65. PROFESSIONAL PRACTICE.

Fifth year, first term, 2-0-2.

A course of lectures and discussions on professional ethics, office organization and management, competitions, contracts, specifications, legal questions, and the general procedure of architectural practice.

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. 79 and 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 166 of this catalogue.

BIOLOGY

PROFESSOR WYCKOFF, ASSISTANT PROFESSOR LOWER
INSTRUCTOR 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 epidemiolgy 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.

Texts: *College Zoology,* Hegner. Hyman's Laboratory Manual for General Zoology, and Library References.

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 appplications. In the laboratory representatives of the various vertebrate classes are studied.

Texts: Newman's *Vertebrate Zoology,* Walters' *Biology of the Vertebrate's,* Hegner's *College Zoology.*

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 immuniological 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; PROFESSOR VAUGHAN; ASSISTANT PROFESSOR MITCHELL; INSTRUCTOR HARRIS

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. A broad basic training is given in the fundamental 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 viewpoint 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

Uniform for all Engineering Courses.

FIRST TERM

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	3 or 7	Inorganic Chemistry	4	3	4
Dr.	9	Engineering Drawing		6	2
Eng.	11	Composition and Rhetoric	3		3
Math.	17	Elementary Functions	5	1	5
M. L.		French, Spanish or German	3		3
		or			
S.S.	11	Social Science			
R.O.T.C.	1	Military or Naval Instruction		5	1.5
Or.		Orientation	1		0
		Total	16	15	18.5

SECOND TERM

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	4 or 8	Inorganic Chemistry	4	3	4
Dr.	10	Engineering Drawing		6	2
Eng.	12	Composition and Rhetoric	3		3
Engr.	1	Introduction to Engineering	1		1
Math.	18	Analytic Geometry	5	1	5
M. L.		French, Spanish or German	3		3
		or			
S.S.	12	Social Science			
R.O.T.C.	2	Military or Naval Instruction		5	1.5
		Total	16	15	19.5

SOPHOMORE YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Cer. E.	23	Products and Materials	3		3
Eng.	33	Humanities	3		3
Math.	23	Differential Calculus	5		5
Phys.	27	Physics	5	3	6
R.O.T.C.	3	Military or Naval Instruction		5	1.5
		Total	16	8	18.5

Second Term

Cer. E.	24	Processes and Tests	1	3	2
Chem.	13	Qualitative Analysis	2	6	3
Eng.	34	Humanities	3		3
Math.	24	Integral Calculus	5		5
Phys.	28	Physics	5	3	6
R.O.T.C.	4	Military or Naval Instruction		5	1.5
		Total	16	17	20.5

JUNIOR YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Cer. E.	31	Formation of Wares	3		3
Cer. E.	35	Heavy Clay Products Laboratory		6	2
*Ec.	95	Accounting	3		3
Geol.	41	General Geology	3		3
Mech.	31	Applied Mechanics	3		3
Mech.	47	Mechanics of Materials	2		2
M. E.	43	Thermodynamics	2		2
		Total	16	6	18

JUNIOR YEAR

Second Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Cer. E.	36	Bodies	4		4
Cer. E.	38	Calculations	3		3
Chem.	20	Quantitative Analysis	3	6	5
Geol.	44	General Geology Laboratory		3	1
Mech.	40	Applied Mechanics	2		2
Phys.	190	Pyrometry	1	3	2
		Total	13	12	17

*Military or Naval Instruction is optional for Accounting.

SENIOR YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Cer. E.	51	Drying Claywares	3		3
Cer. E.	59	Whitewares Laboratory	1	6	3
Cer. E.	65	Ceramic Microscopy	2	3	3
Chem.	141	Physical Chemistry	3		3
Geol.	51	Mineralogy	1	3	2
M. E.	77	Steam Power Engineering	3		3
		Total	13	12	17

Second Term

Cer. E.	52	Firing Claywares	2		2
Cer. E.	54	Refractories	2		2
Cer. E.	56	Vitreous Ceramic Coatings	3	3	4
Cer. E.	62	Design and Construction		6	2
Chem.	142	Physical Chemistry	3		3
*Ec.	24	Economics	3		3
		**Elective			3
		Total			19

*Military or Naval Instruction is optional for Economics.

**ELECTIVES

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Cer. E.	70	Thesis		9	3
Cer. E.	110	Enamels	2	3	3
Cer. E.	120	Cements	2	3	3

COURSES OF INSTRUCTION

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

CER. E. 23. PRODUCTS AND MATERIALS. Prerequisite, Chem. 4.

Sophomore, first term, 3-0-3.

A history of ceramics; relationship between industrial service requirements and the properties of ceramic products. The common ceramic materials are classified according to mineralogical character; their influence on each other and the effect of size of particle are stressed.

CER. E. 24. PROCESSES AND TESTS. Prerequisite, Cer E. 23.

Sophomore, second term, 1-3-2.

Winning and preparation of ceramic materials including equipment involved and efficiency obtained. The accompanying laboratory course is concerned with standard testing methods, the mathematical analysis of data, inherent errors, and practical applications to industry.

CER. E. 31. FORMATION OF WARES. Prerequisite, Cer E. 24.

Junior, first term, 3-0-3.

Methods and mechanism of formation of ceramic products; the effect of this phase of production on the control of properties and adaptation to service requirements. Dry press, stiff mud, soft mud, and casting methods are included.

CER. E. 35. HEAVY CLAY PRODUCTS LABORATORY. Prerequisite, Cer E. 31.

Junior, first term, 0-6-2.

The relation of laboratory technique to plant practice, including properties of materials, machines, processes and products. Commercial raw materials and products are provided and analyzed and the corresponding plants are visited upon completion of the laboratory tests.

CER. E. 36. BODIES. Prerequisites, Chem. 13, Cer E. 31.

Junior, second term, 4-0-4.

The physical and chemical properties of earthy materials throughout the firing range used in the production of ceramic wares. Control of phases of manufacture to introduce in the product those properties service conditions require. Principally concerned with whitewares, but terra cotta, heavy clay products and glass are included.

CER. E. 38. CALCULATIONS. Prerequisite, Cer E. 31.

Junior, second term, 3-0-3.

Solutions of engineering and practical mathematical problems involved in the manufacture of ceramic wares.

CER. E. 51. DRYING CLAYWARES. Prerequisites, Phys. 25, Cer E. 36.

Senior, first term, 3-0-3.

The mechanics and physics of drying ceramic wares, including correlation of heat, humidity and air flow as applied to wet raw bodies. Types of driers are covered with special reference to their control characteristics and ability to dry a particular ware safely at a minimum cost.

CER. E. 52. FIRING CLAYWARES.

Senior, second term, 2-0-2.

Objectives of firing; combustion behavior of gaseous, liquid and solid fuels; the mechanics of heat transfer, physical and chemical properties of clay and other raw materials under heat treatment; firing characteristics of periodic and continuous kilns.

CER. E. 54. REFRACTORIES.

Senior, second term, 2-0-2.

The utilization of refractories in industry; the control of properties of refractories through raw materials and all phases of manufacture to best meet industrial requirements.

CER. E. 56. VITREOUS CERAMIC COATINGS.

Senior, second term, 3-3-4.

Phase relations of the important oxides and the properties of these oxides in siliceous melts are studied. The fundamental 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 faults.

CER. E. 59 WHITEWARES LABORATORY. Prerequisite, Cer. E. 36.

Senior, first term, 1-6-3.

Practical and fundamental laboratory studies to determine the control characteristics and properties of molds, saggers, whitewares, slips and glazes by experiment and conclusions. Students are also encouraged to design and execute pieces and experiments in their spare time.

CER. E. 62. DESIGN AND CONSTRUCTION. Prerequisite, Cer E. 51.

Senior, second term, 0-6-2.

Design and working drawings of ceramic manufacturing equipment and plant layouts for specified products. The student makes his own selection under the supervision and with the approval of the instructor.

CER. E. 65. CERAMIC MICROSCOPY. Prerequisites, Geol. 51, Phys. 25.

Senior, first term, 2-3-3.

Involves the use of the microscope in the study and control of composition and structure of ceramic bodies and raw materials.

CER. E. 70. THESIS.

Senior, second term, 0-9-3.

Each senior electing to prosecute a thesis, conducts an original investigation on an approved ceramic subject under the supervision of the instructor in charge. The object of this course is to place the student upon his own initiative and to coordinate the knowledge that he has previously received.

CER. E. 110. ENAMELS.

Senior, second term, 2-3-3.

Subject matter covers the metallurgy of foundation materials, and the processing of the metal and enamels for sheet iron and cast iron enameled ware. Past and current theory and practice are included.

CER. E. 120. CEMENTS.

Senior, second term, 2-3-3.

Includes the required properties of raw materials, processing and the hydraulic properties of cements. Portland, magnesia, high alumina, dental, and gypsiferous cements are included.

INSPECTION TRIPS.

During the spring of each year, the Seniors make an inspection trip to a number of selected ceramic plants. A wide variety of plants is chosen in order to give the student a broad insight into commercial practice.

For Graduate Courses see page 166 of this catalogue.

DEPARTMENT OF CHEMISTRY AND CHEMICAL ENGINEERING

GILBERT H. BOGGS, PROFESSOR AND DIRECTOR OF THE DEPARTMENT

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

THE DIVISION OF CHEMISTRY

JOHN L. DANIEL, PROFESSOR AND CHIEF OF THE DIVISION

PROFESSORS WROTH AND TAYLOR, W. S.; ASSOCIATE PROFESSOR FRIEDMAN; ASSISTANT PROFESSORS WELLS, RICHARDSON, AND WHITLEY; INSTRUCTORS WADDLE*, SPICER, TAYLOR, J. L., TRIMBLE, EDWARDS, JACKSON, AND RUMMEL, AND ASSISTANTS.

Included in this Division are:

1. The courses in chemistry required in the various engineering curricula.
2. A curriculum leading to the degree Bachelor of Science in Chemistry.
3. Graduate courses which may be used in meeting the requirements for the Master's Degree. (See page 167).

The number of students accepted as candidates for the degree in chemistry will be limited. A selection will be made at the beginning of both the Sophomore and the Junior years.

FRESHMAN YEAR

See page 51. German must be elected.

*Leave of Absence 1937-38.

SOPHOMORE YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	15	Theory of Analysis	3	6	5
Eng.	33	Humanities	3		3
Math.	23	Differential Calculus	5		5
Phys.	27	Mechanics and Heat	5	3	6
Mil.	3	R.O.T.C. Basic Course		5	1.5
		Total	16	14	20.5

Second Term

Chem.	20	Quantitative Analysis	3	6	5
Eng.	34	Humanities	3		3
Math.	24	Integral Calculus	5		5
Phys.	28	Electricity, Sound, and Light	5	3	6
Mil.	4	R.O.T.C. Basic Course		5	1.5
		Total	16	14	20.5

JUNIOR YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	28	Organic Chemistry	3	6	5
Chem.	147	Physical Chemistry	3	5	4.6
Phys.	61	Int. Modern Physics	3		3
		Electives			

Second Term

Chem.	29	Organic Chemistry	3	6	5
Chem.	158	Physical Chemistry	3	5	4.6
Ec.	24	Economics for Engineers	3		3
		Electives			

SENIOR YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	107	Advanced Topics in Chemistry	3		3
Chem.	111	Industrial Chemistry	3		3
Chem.	128	Technical Analysis	1	9	4
		Electives			

Second Term

Chem.	108	Advanced Topics in Chemistry	3		3
Chem.	114	Organic Analysis	1	9	4
		Electives			

The degree, Bachelor of Science in Chemistry, will be awarded upon the completion of the above prescribed courses and 30 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

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	121	Colloid Chemistry	3	3	4
Chem.	122	Food and Nutrition	3		3
Chem.	105	Special Problems	(By Arrangement)		
Chem.	123	Topics in Organic Chemistry	3		3
Chem.	124	Topics in Physical Chemistry	3		3
Chem.	125	Valence and Structural Chemistry	3		3
		Any Course in Chemical Engineering			
		Any No. 200 to 299 Course in Chemistry			
		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 299			
		English 45			
		Mil. 5, 6, 7, 8			

THE DIVISION OF CHEMICAL ENGINEERING

HAROLD A. BUNGER, PROFESSOR AND CHIEF OF THE DIVISION

ASSOCIATE PROFESSOR WEBER; INSTRUCTOR EVERS, AND ASSISTANT

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). The number of students who will be permitted to register for the Junior and Senior work in Chemical Engineering will be strictly limited. The selection will be made on the basis of the student's ability as demonstrated in two years of previous work.

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 in Chemical Engineering.

FRESHMAN YEAR

See Page 51. 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 58.

JUNIOR YEAR

FIRST TERM

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ch. E.	45	Gas-Fuels, Stoichiometry	3	3	4
Chem.	28	Organic Chemistry	3	6	5
Chem.	147	Physical Chemistry	3	5	4.6
Ec.	21	Economics	3		3
Mech.	35	Applied Mechanics	3		3
		Total	15	14	19.6

SECOND TERM

Ch. E.	56	Unit Operations	3	3	4
Chem.	29	Organic Chemistry	3	6	5
Chem.	158	Physical Chemistry	3	5	4.6
Ec.	22	Economics	3		3
Mech.	36	Mechanics of Materials	2		2
		Total	14	14	18.6

SENIOR YEAR

FIRST TERM

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ch. E.	41	Engineering Materials	3	3	4
Ch. E.	157	Unit Operations	3	3	4
Ch. E.	161	Chem. Technology	3		3
Ch. E.	109	Special Problems		3	1
Ch. E.	171	Ch. E. Calculations	3		3
E. E.	2	Applied Electricity	3		3
		Total	15	9	18

SECOND TERM

Ch. E.	110	Special Problems		3	1
Ch. E.	162	Chem. Technology	3		3
Ch. E.	172	Ch. E. Calculations	3		3
E. E.	3a	E. E. Laboratory		3	1.3
M. E.	73	Heat Engines	4		4
M. E.	74	Heat Engines Laboratory		3	1
Phys.	61	Int. Modern Physics	3		3
Phys.	65	Advanced Laboratory		3	1
		Elective			

154.5 credits are the minimum number of credits required for the Bachelor of Science Degree in Chemical Engineering.

Military or Naval Electives:

Junior, first term.....Ec. 21
Junior, second term.....Ec. 22
Senior, first and second term.....None

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. 0.

Students unprepared to take the Freshman Chemistry course are placed in Chem. 0. No college credit is allowed for completion of this course.

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., 4-6-4. 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 fundamental laws and theories of analytical chemistry. The practice work includes the identification of the common positive and negative ions.

CHEM. 13c. THE THEORY OF 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 inorganic reactions and the identification of both positive and negative ions.

CHEM. 17-18. QUANTITATIVE ANALYSIS. Prerequisite Chem 13.

First term, Senior T. E., 2-6-3. Fee $5.00.

Second term, Senior T. E., 1-6-2-3. Fee $5.00.

The purpose of these courses is to give the textile student drill in the simple manipulations of quantitative chemistry and the solution of chemical problems.

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. and Junior Cer. 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.

CHEM. 26-27. ORGANIC CHEMISTRY. Prerequisite, Chem. 4 or Chem. 8.

First and second terms, Junior T. E., 3-3-4. Fee $6.00 each term.

A study of the various classes of organic compounds. The laboratory work is similar to Chem. 28 and 29 but not as extended.

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.

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. 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, but somewhat shorter.

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. 158.

First and second terms, Senior Chem., 3-0-3.

Advanced inorganic chemistry and history of chemistry from the standpoint of valence and the periodic law.

CHEM. 111. INDUSTRIAL CHEMISTRY. Prerequisite, Chem. 29.

First term, Senior Chem., 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, 1-9-4. 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. 147.

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. 141-142. PHYSICAL CHEMISTRY. Prerequisite, Chem. 20, Phys. 25, and Math. 24.

First term, Senior Cer. E., 3-0-3.

Second term, Senior Cer. E., 3-0-3.

These courses consist of the lectures only of Chem. 147-158 below.

CHEM. 146c-147c-148c. PHYSICAL CHEMISTRY. Prerequisite, Chem. 17c, Chem. 36c, Phys. 35c, and Math. 33c.

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., 4-4-3.6. Fee $2.00.

Third term, Co-operative Senior Ch. E., 4-4-3.6. Fee $2.00.

CHEM. 147-158. PHYSICAL CHEMISTRY. Prerequisite, Chem. 20, Phys. 28, and Math. 24.

First term, Junior Chem. and Ch. E., 3-5-4.6. Fee $3.00.

Second term, Junior Chem. and Ch. E., 3-5-4.6. Fee $3.00.

These are the conventional courses in theoretical chemistry with some stress on engineering applications. Accompanying the lectures is a laboratory course illustrating the general principles studied.

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. 38c.

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.

CH. E. 41c. ENGINEERING MATERIALS. Prerequisite, Chem. 17c.

First term, Co-operative Pre-Junior Ch. E., 1-4-1.3. Fee $3.00.

See course description under Ch. E. 41.

CH. E. 41. ENGINEERING MATERIALS. Prerequisite, Chem. 20.

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, 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. 109-110. SPECIAL PROBLEMS. Prerequisite, Ch. E. 56 concurrently.

Second term, Junior Ch. E., 0-3-1, fee to be arranged.

First term, Senior Ch. E., 0-3-1, 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 content 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.

CH. E. 171-172. CHEMICAL ENGINEERING CALCULATIONS. Prerequisite, Ch. E. 157, Chem. 147.

First term, Senior Ch. E., 3-0-3.

Second term, Senior Ch. E., 3-0-3.

See Ch. E. 171c, 172c for description of the course.

CH. E. 171c-172c. CHEMICAL ENGINEERING CALCULATIONS. Prerequisite, Ch. E. 157c, Chem. 147c and 148c concurrently.

Second term, Senior Ch. E., 4-0-2.6.

Third term, Senior Ch. E., 4-0-2.6.

The application of physicochemical principles and the thermodynamic method to the problems of industry.

DEPARTMENT OF CIVIL ENGINEERING

PROFESSORS SNOW AND J. M. SMITH; ASSOCIATE PROFESSORS BLACK AND LUCAS; ASSISTANT PROFESSOR THRASH

Civil Engineering is construction engineering. The Civil Engineer designs, builds, maintains and, often times, operates railroads, highways, bridges, buildings, harbors, sewers, sewage disposal plants, water supplies, power developments, irrigation systems, drainage districts, airports, city plans and maps.

He is given a title, such as, highway engineer, bridge engineer, etc., depending on which of these becomes his specialty, but the title of "Civil Engineer," which embraces all of them, is the important one, toward which a college course should lead.

As practical experience is demanded before the C. E. degree can be granted, it is proper to confer the B. S. in C. E. at the end of the college course, or the M. S. in C. E. later, if enough additional college work is completed.

Based on these fundamental ideas, this civil engineering course, covering basic subjects, is offered.

FRESHMAN YEAR

See page 51

SOPHOMORE YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
C. E.	23	Plane Surveying	2	6	4
Eng.	33	Humanities	3		3
Math.	23	Calculus	5		5
Phys.	27	Physics	5	3	6
R.O.T.C.	3	Military or Naval Instruction		5	1.5
		Total	15	14	19.5

Second Term

C. E.	24	Route Surveying	2	6	4
Eng.	34	Humanities	3		3
Math.	24	Calculus	5		5
Phys.	28	Physics	5	3	6
R.O.T.C.	4	Military or Naval Training		5	1.5
		Total	15	14	19.5

JUNIOR YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Biol.	38	General Bacteriology	2	4	3
Geol.	41	Geology	3		3
Math.	136	Differential Equations (Elec. for Mil.)	3		3
Mech.	39	Applied Mechanics	3	3	4
Mech.	47	Mechanics of Materials	2		2
C. E.	25	Civil Engineering Drawing		3	1
C. E.	33	Hydraulics	3		3
		Total	16	10	19

Second Term

C. E.	35	Sewage and Sewerage Treatment	2		2
C. E.	36	Engineering Economics (Elec. for Mil.)	2		2
Eng.	45	Public Speaking	3		3
Geol.	46	Geology	3	3	4
Mech.	48	Mechanics of Materials	3		3
M. E.	44	Thermodynamics	3		3
M. E.	10	Welding and Heat Treatment		3	1
		Total	16	3	18

SENIOR YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
C. E.	48	Highway Economics	2	3	3
C. E.	51	Water Supply Engineering (Elec. of Mil.)	2		2
C. E.	153	Framed Structures	3	3	4
C. E.	155	Reinforced Concrete	3	3	4
Ec.	21	Economics	3		3
Geol.	51	Mineralogy	1	3	2
M. E.	57	Materials Laboratory	1	3	1.3
		Total	15	15	19.3

Second Term

C. E.	164	City Planning	1	3	2
C. E.	154	Framed Structures	2	3	3
C. E.	156	Concrete Structures	2	3	3
C. E.	159	Highway Economics	2	3	3
Ec.	22	Economics	3		3
M. E.	56	Hydraulic Laboratory	1	3	1.3
M. E.	77	Elementary Steam Power Engineering	3		3
		Total	14	15	18.3

Electives:

C. E.	61	Contracts and Specifications	2		2
Chem.	67	Metallurgy	3		3
		Military or Naval Training			

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.

Theory of stadia, plane table applications to topographic surveying, city and mine surveying, U. S. Government system of public land surveys. Filing and recording of deeds.

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

Texts: Elements of Surveying, Davis, Foote and Rayner. Plane Surveying, Finch.

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.

Text: Railroad Curves and Earth Work, Allen.

C. E. 25, 25c, 26c. Civil Engineering Drawing.

Junior C. E., second term, 0-3-1.
Sophomore C. E., Co-op., first term, 0-3-.7.
Sophomore C. E. Co-op., second term, 0-6-1.3.

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.

Text: French and Turnbull's Lettering Book, No. 2.

C. E. 33, 33c. Hydraulics. Prerequisites, Phys. 23, 25, 33c. Math. 23, 32c.

Junior E. E. and G. E., second term, 3-0-3.
Junior C. 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.

Methods of impounding water, designing of city water systems. The design of dams and stand pipes. Water purification processes and plants. Water softening.

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.

Text: Business Law for Engineers, Allen.

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, 3-3-2.7.

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. 71, 72. BUILDING CONSTRUCTION.

Senior Arch. E., first and second term, 1-3-2.

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.

Design of concrete mixes, selection of concrete aggregates, mixing, placing and protection of concrete, waterproofing of concrete structures, design of simple concrete structures.

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. FRAMED STRUCTURES. Prerequisites, C. E. 153, 53c.

Senior C. E., second term, 2-3-4.

Senior C. E. Co-op., third term, 2-3-2.2.

A continuation of C. E. 153 and 53c. Designs and details of steel structures. Bills of materials. Detail plans, fabrication and erection.

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, 71c.

Senior C. E., second term, 2-3-3.

Senior C. E. Co-op., third term, 3-6-3.3.

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, 48c and 71c. 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 of the Co-operative Plan; S. C. Puckette, Assistant to the Director; Mary Waring Green, Secretary

(For the faculty see the regular departments listed in alphabetical order.)

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 Plan originally offered only the Mechanical and the 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 throughout the Southeast. 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 sixty firms, including power companies, gas companies, railroads, machinery and mechanical equipment, and pulp and paper manufacturers, chemical industries, foundries, steel mills, construction and engineering firms, textile mills, electric and telephone companies. The area covered by these industries includes the Southern and many sections of the Mid Atlantic 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 away from 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 —. Six and one-half optional units on page — 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 course.

Anyone interested in making application for admission into the co-operative courses 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 Plan,
Georgia School of Technology,
Atlanta, Georgia.

FRESHMAN YEAR

(Identical for all Engineering Courses)

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	7c	Inorganic Chemistry	5	3	4
†Co-op.	1c	Co-ordination	1		.2
Dr.	9c	Engineering Drawing		9	2
Eng.	11c	Composition and Rhetoric	4		2.6
Math.	11c	Elementary Functions	5		3.3
Mil.	11c	Military Instruction		5	1
		Total	15	17	13.1

Second Term (11 weeks)

Chem.	8c	Inorganic Chemistry	4	6	4
Dr.	10c	Engineering Drawing		9	2
Eng.	12c	Composition and Rhetoric	4		2.6
Math.	12c	Elementary Functions	6		4
Mil.	12c	Military Instruction		5	1
		Total	14	20	13.6

†Required of all first-term freshmen.

SOPHOMORE YEAR

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

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
*Dr.	25c	Engineering Drawing		3	.7
Eng.	33c	Humanities	4		2.6
Math.	13c	Analytic Geometry	6		4
Mil.	13c	Military Instruction		5	1
Phys.	33c	Physics	6	3	4.7
		Total	16	11	13

Second Term (11 weeks)

*Dr.	26c	Engineering Drawing		6	1.3
Eng.	34c	Humanities	5		3.3
Math.	31c	Calculus	5		3.3
Mil.	14c	Military Instruction		5	1
Phys.	34c	Physics	6	3	4.7
		Total	16	14	13.6

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

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	13c	Qualitative Analysis	3	9	3.3
Math.	13c	Analytic Geometry	6		4
Mil.	13c	Military Instruction		5	1
Phys.	33c	Physics	6	3	4.7
		Total	15	17	13.0

Second Term (11 weeks)

Chem.	17c	Quantitative Analysis	3	9	3.3
Math.	31c	Calculus	5		3.3
Mil.	14c	Military Instruction		5	1
Phys.	34c	Physics	6	3	4.7
		Total	14	17	12.3

PRE-JUNIOR YEAR

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ch. E.	45c	Gas—Fuel	1	6	2
Eng.	33c	Humanities	4		2.6
Math.	32c	Calculus	5		3.3
*M. L.	1c	German	3		2
Phys.	35c	Physics	4	3	3.3
		Total	17	9	13.2

Second Term (11 weeks)

Ch. E.	41c	Engineering Materials	1	4	1.3
Eng.	34c	Humanities	5		3.3
Math.	33c	Calculus	5		3.3
Mech.	39c	Applied Mechanics	4	6	4
*M. L.	2c	German	3		2
		Total	18	10	13.9

JUNIOR YEAR

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	35c	Organic Chemistry	4	8	4.4
Ch. E.	56c	Unit Operation	3	3	2,6
M. E.	43c	Thermodynamics	3		2
Mech.	40c	Applied Mechanics	3		2
*M. L.	3c	German	3		2
		Total	16	11	13

Second Term (11 weeks)

Chem.	36c	Organic Chemistry	4	8	4.4
Ch. E.	157c	Unit Operations	4	4	3.6
Ec.	24c	Economics	4		2.6
*M. L.	4c	German	3		2
		Total	15	12	12.6

SENIOR YEAR

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	146c	Physical Chemistry	3	4	3
Ch. E.	110c	Special Problems	1	6	2
Ch. E.	161c	Chemical Technology	3		2
E. E.	71c	Applied Electricity	4		2.6
*Eng.	45c	Public Speaking	3		2
Mech.	47c	Mechanics of Materials	3		2
		Total	17	10	13.6

Second Term (11 weeks)

Chem.	147c	Physical Chemistry	4	4	3.6
Ch. E.	162c	Chemical Technology	3		2
Ch. E.	171c	Chemical Engineering Calculation	4		2.6
E. E.	74c	Electrical Engineering Laboratory		4	1
M. E.	74c	Heat Engines Laboratory	1	3	1
M. E.	77c	Elementary Power Engineering	4		2.6
		Total	16	11	12.8

Third Term (11 weeks)

Chem.	148c	Physical Chemistry	4	4	3.6
Ch. E.	111c	Special Problems	1	6	2
Ch. E.	160c	Design		8	1.7
Ch. E.	163c	Chemical Technology	3		2
Ch. E.	172c	Chemical Engineering Calculations	4		2.6
*Eng	63c	Technical English	3		2
		Total	15	18	13.9

*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.

COURSE OF STUDY

For Freshman and Sophomore Years, see page 78.

PRE-JUNIOR YEAR

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ch. E.	61c	Metallurgy	4		2.6
C. E.	21c	Plane Surveying	2	4	2.2
Math.	32c	Calculus	5		3.3
M. E.	10c	Welding		3	.7
M. L.	1c	German	3		2
Phys.	35c	Physics	4	3	3.3
		Total	18	10	14.1

Second Term (11 weeks)

C. E.	38c	Engineering Economics	3		2
Geol.	36c	Geology	3	3	2.7
Math.	33c	Calculus	5		3.3
Mech.	39c	Applied Mechanics	4	6	4
*M. L.	2c	German	3		2
		Total	18	9	14.0

JUNIOR YEAR

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
C. E.	24c	Route Surveying	3	4	3
Eng.	45c	Public Speaking	3		2
M. E.	43c	Thermodynamics	3		2
M. E.	45c	Calibration Laboratory	1	3	1
Mech.	40c	Applied Mechanics	3		2
Mech.	47c	Mechanics of Materials	3		2
*M. L.	3c	German	3		2
		Total	19	7	14

Second Term (11 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Biol.	38c	Sanitary Engineering	3	4	3
C. E.	33c	Hydraulics	4		2.6
M. E.	56c	Hydraulic Laboratory	1	3	1
M. E.	77c	Elementary Power Engineering	4		2.6
Mech.	48c	Mechanics of Materials	4		2.6
*M. L.	4c	German	3		2
		Total	19	7	13.8

SENIOR YEAR

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
C. E.	63c	Geodesy and City Planning	3	3	2.7
C. E.	65c	Reinforced Concrete	2	3	2.2
C. E.	68c	Framed Structures	2	3	2.2
C. E.	85c	Water Supply Engineering	2		1.3
Eng.	63c	Technical English	3		2
*E. E.	71c	Applied Electricity	4		2.6
M. E.	83c	Heat Power Laboratory		4	1
		Total	16	13	14.0

Second Term (11 weeks)

C. E.	66c	Reinforced Concrete	2	3	2.2
C. E.	69c	Framed Structures	2	3	2.2
C. E.	71c	Highway Engineering	3	6	3.3
C. E.	81c	Sewerage and Sewage Treatment	2		1.3
Ec.	24c	Economics	4		2.6
*E. E.	74c	Electrical Engineering Laboratory		4	1
		Total	13	16	12.6

Third Term (11 weeks)

C. E.	62c	Contracts and Specifications	3		2
C. E.	67c	Reinforced Concrete	2	3	2.2
C. E.	70c	Framed Structures	2	3	2.2
C. E.	72c	Highway Economics	3	6	3.3
C. E.	82c	Sewerage and Sewage Treatment	2		1.3
C. E.	86c	Reservoirs and Dams	2		1.3
M. E.	57c	Materials Laboratory	1	3	1
		Total	15	15	13

*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.

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

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ec.	24c	Economics	4		2.6
E. E.	91c	Electricity and Magnetism	4		2.6
Math.	32c	Calculus	5		3.3
M. L.	1c	German	3		2
Phys.	35c	Physics	4	3	3.3
		Total	20	3	13.8

Second Term (11 weeks)

E. E.	92c	Principles of D. C. Machinery	4		2.6
Math.	33c	Calculus	5		3.3
M. E.	43c	Thermodynamics	3		2
Mech.	39c	Applied Mechanics	4	6	4
M. L.	2c	German	3		2
		Total	19	6	13.9

JUNIOR YEAR

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
E. E.	81c	Electrical Engineering Laboratory	1	5	1.4
E. E.	93c	Alternating Current Circuits	4		2.6
Math.	136c	Differential Equations	4		2.6
Mech.	40c	Applied Mechanics	3		2
Mech.	47c	Mechanics of Materials	3		2
*M. L.	3c	German	3		2
		Total	18	5	12.6

Second Term (11 weeks)

C. E.	33c	Hydraulics	4		2.6
E. E.	82c	Electrical Engineering Laboratory	1	5	1.4
E. E.	94c	Alternating Current Circuits	4		2.6
M. E.	45c	Instruments and Fuels Laboratory	1	3	1
M. E.	77c	Power Plant Engineering	4		2.6
*M. L.	4c	German	3		2
		Total	17	8	12.2

SENIOR YEAR

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
E. E.	27c	Seminar	1		.7
E. E.	83c	Electrical Engineering Laboratory	1	7	1.8
E. E.	95c	Alternating Current Machinery	5		3.3
E. E.	133c	Radio Engineering	4		2.6
M. E.	10c	Welding and Heat Treating		6	1.4
M. E.	47c	Power Plant Auxiliaries	1	3	1
		*Elective	3		2
		Total	18	16	12.8

Second Term (11 weeks)

E. E.	28c	Seminar	1		.7
E. E.	66c	Transmission	4		2.6
E. E.	84c	Electrical Engineering Laboratory	1	7	1.8
E. E.	96c	Alternating Current Machinery	4		2.6
**E. E.	134c	Radio Engineering	5		3.3
M. E.	83c	Heat Power Laboratory		4	1
		*Elective	3		2
		Total	18	11	14

Third Term (11 weeks)

Ec.	93c	Finance	3		2
E. E.	85c	Electrical Engineering Laboratory	1	7	1.8
E. E.	97c	Alternating Current Machinery	3		2
**E. E.	136c	Radio Laboratory	1	8	2
Eng.	45c	Public Speaking	3'		2
M. E.	87c	Heat Power Laboratory		4	1
		*Elective	3		2
		Total	14	19	12.8

*Advanced course in military, 2 credit hours per quarter for six quarters, may be taken instead of German and electives.
**Elective.

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

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ch. E.	61c	Metallurgy	4		2.6
M. E.	22c	Heat Treating and Welding Laboratory	2	8	2.3
Math.	32c	Calculus	5		3.3
*M. L.	1c	German	3		2
Phys.	35c	Physics	4	3	3.3
		Total	18	11	13.5

Second Term (11 weeks)

Ec.	24c	Economics	4		2.6
Math.	33c	Calculus	5		3.3
M. E.	7c	Foundry		4	1
M. E.	23c	Pattern Making	1	3	1
Mech.	39c	Applied Mechanics	4	6	4
*M. L.	2c	German	3		2
		Total	17	13	13.9

JUNIOR YEAR

First Term (12 weeks)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
M. E.	39c	Thermodynamics	5		3.3
M. E.	53c	Time and Motion Study	1	3	1.3
M. E.	16c	Machine Laboratory	2	6	2
M. E.	45c	Instruments and Fuels Laboratory	1	3	1
Mech.	40c	Applied Mechanics	3		2
Mech.	47c	Mechanics of Materials	3		2
*M. L.	3c	German	3		2
		Total	18	12	13.6

SECOND TERM (11 WEEKS)

C. E.	33c	Hydraulics	4		2.6
M. E.	40c	Thermodynamics	3		2
M. E.	47c	Power Auxiliaries Laboratory	1	3	1
M. E.	58c	Seminar	1		.2
M. E.	68c	Power Plants	5		3.3
Mech.	48c	Mechanics of Materials	4		2.6
*M. L.	4c	German	3		2
		Total	21	3	13.7

SENIOR YEAR

FIRST TERM (12 WEEKS)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
C. E.	21c	Surveying	2	4	2.2
E. E.	61c	D. C. Machines	3		2
M. E.	79c	Machine Design	3		2
M. E.	55c	Organization and Management	4		2.6
M. E.	66c	Internal Combustion Engines	3		2
M. E.	83c	Heat Power Laboratory		4	1
*Ec.	94c	Marketing	3		2
		Total	18	8	13.8

SECOND TERM (11 WEEKS)

E. E.	62c	A. C. Machines	3		2
Eng.	45c	Public Speaking	3		2
M. E.	59c	Seminar	1		.2
M. E.	80c	Machine Design	5		3.3
M. E.	87c	Heat Power Laboratory	1	4	1
M. E.	170c	Refrigeration, Heating and Ventilating	5		3.3
*Ec.	95c	Accounting	3		2
		Total	21	4	13.8

THIRD TERM (11 WEEKS)

C. E.	62c	Contracts and Specifications	3		2
E. E.	64c	Electrical Engineering Laboratory	1	6	2
Eng.	63c	Technical English	3		2
M. E.	60c	Seminar	1		.2
M. E.	88c	Heat Power Laboratory	1	4	1.1
M. E.	81c	Machine Design	5	3	4
		Elective	3		2
		Total	17	13	13.3

*The advanced course in military, 2 credit hours per quarter for six quarters, may be taken instead of German, Marketing, and Accounting.

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

FIRST TERM (12 WEEKS)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	13c	Qualitative Analysis	3	9	3.3
Math.	32c	Calculus	5		3.3
M. L.	1c	German	3		2
Phys.	35c	Physics	4	3	3.3
T. E.	23c	Fabric Design		4	1
T. E.	39c	Weaving		4	1
		Total	15	20	13.9

SECOND TERM (11 WEEKS)

Math.	33c	Calculus	5		3.3
M. E.	45c	Calibration Laboratory	1	3	1
Mech.	39c	Applied Mechanics	4	6	4
M. L.	2c	German	3		2
T. E.	24c	Fabric Design		4	1
T. E.	40c	Weaving	3	3	2.7
		Total	16	16	14

JUNIOR YEAR

FIRST TERM (12 WEEKS)

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	31c	Organic Chemistry	4	4	3.6
M. E.	37c	Kinematics of Mechanism	3	4	3
M. L.	3c	German	3		2
T. E.	35c	Fabric Design and Analysis		9	2
T. E.	45c	Weaving	3	4	3
T. E.	61c	Yarn Manufacture Theory	4		2.6
		Total	17	21	16.2

SECOND TERM (11 WEEKS)

Chem.	32c	Organic Chemistry	4	4	3.6
M. E.	43c	Thermodynamics	3		2
M. L.	4c	German	3		2
T. E.	22c	Dyeing Laboratory		4	1
T. E.	36c	Fabric Design and Analysis		8	2
T. E.	46c	Weaving	4		2.6
T. E.	62c	Yarn Manufacturing Theory	4		2.6
		Total	18	16	15.8

SENIOR YEAR

First Term (12 weeks)

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

Second Term (11 weeks)

Ec.	24c	Economics	4		2.6
E. E.	74c	Applied Electrical Engineering Laboratory		4	1
M. E.	77c	Elementary Power Engineering	4		6
M. L.	6c	German	3		2
T. E.	64c	Yarn Manufacture	4	6	4
T. E.	168c	Testing	2	3	2
		Total	16	17	14,6

Third Term (11 weeks)

Ec.	93c	Survey in Business	3		2
T. E.	38c	Jacquard Design		4	1
T. E.	54c	Weaving		4	1
T. E.	84c	Dyeing	3	4	3
T. E.	81c	Knitting	1	3	1.3
T. E.	169c	Testing	2	3	2
T. E.	185c	Rayon Processing, or			
T. E.	123c	Design and Analysis	2	6	4
		Total	11	24	14.3

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

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 employes. 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.

DEPARTMENT OF ECONOMICS AND SOCIAL SCIENCE

Professor Dennison; Associate Professors Armstrong, Wenn, Warren, Hartzell, Brewster; Assistant Professors Proctor, Lozier; Instructor Elliott.

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

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.

Ec. 28. Corporations.

Second term, 3-0-3.

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 sttaement, 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.

Ec. 51. American Government.

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, Collective 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, interbusiness 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.

Ec. 94. Marketing. Survey course.

First and second terms, 3-0-3.

A general survey course designed to familiarize the students with the modern facilities for marketing, and the methods employed in distributing goods.

Ec. 95. Accounting. Survey course.

First and second terms, 3-0-3.

A brief survey of the analysis and recording of business transactions; preparation of financial statements, and their interpretation.

Ec. 96. Business Law. Survey course.

First and second terms, 3-0-3.

This course is designed to give to the student a brief survey in Contracts, Agency, Bailments, Sales, Partnerships, Corporations, Negotiable Instruments, Bankruptcy and Real Property Law.

*S.S. 11, 12. Social Science.

Freshman, first and second terms, 3-0-3, each course.

This course is designed to give students of the Freshman class a comprehensive survey in outline of the facts and processes by which the world in which they live has come to be what it is, so that they may be more adequately prepared for useful citizenship. It will cover two semesters and embrace approximately 96 hours. A few introductory lectures will give a vista of pre-historic man and his environment. The more ancient, Grecian, Hellenistic, and Roman civilizations will be briefly reviewed for their permanent contributions to the modern world. But the Middle Ages may be taken as the actual starting point of the course, as the foundation upon which the modern structure rests. The pertinent offerings of History, Economics, Government, Sociology and Geography with some Philosophy, will be woven into an intelligent revelation of the unfolding of our civilization of today.

A fee of $1.00 for each semester will be charged each student taking this course.

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 expanson 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.

S.S. 31. Seminar in World History Since the Armistice.

First term, 3-0-3.

Not open to Freshmen or other students with less than a "B" average. Enrollment limited to ten students. Permission of instructor in charge required for admission to the class.

DEPARTMENT OF ELECTRICAL ENGINEERING

PROFESSORS FITZGERALD, SEIDELL, AND SAVANT; ASSOCIATE PROFESSORS ELLIS, AND DULING; ASSISTANT PROFESSORS STALNAKER AND GERKS; INSTRUCTOR HONNELL.

The course of study is planned to give comprehensive training in the fundamental sciences of Chemistry, Physics, Mathematics and Applied Mechanics. Adequate training is also given in the scientific and applied aspects of important branches of engineering other than electrical, such as Constructive Materials, Steam Engineering, Hydraulics and Hydraulic Machinery.

Parallel with the theoretical work are carefully planned laboratory courses, beginning with the first year in Chemistry and continuing throughout the four years in the various sciences and engineering branches studied. The laboratory work is so conducted as to enable the student to verify theory by performing fundamental experiments.

In the majority of cases students can complete both the electrical and mechanical engineering courses in five years provided they plan their work with the two departments concerned, beginning with the Junior year.

The course of study for the Sophomore, Junior and Senior years is given in the following pages. For the Freshman year see page 51.

SOPHOMORE YEAR

FIRST TERM

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ec.	24	Economics	3		3
Eng.	33	Humanities	3		3
Math.	23	Calculus	5		5
Phys.	23	Physics	5	3	6
R.O.T.C.	3	Military or Naval Instruction		5	1.5
		Total	16	8	18.5

SECOND TERM

Ec.	95	Accounting	3		3
Eng.	34	Humanities	3		3
Math.	24	Calculus	5		5
Phys.	24	Physics	5	3	6
R.O.T.C.	4	Military or Naval Instruction		5	1.5
		Total	16	8	18.5

JUNIOR YEAR

FIRST TERM

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
E. E.	87	Principles of Electrical Engineering	5		5
Math.	136	Differential Equations	3		3
M. E.	5	Heat Treating Laboratory	1	3	1.3
M. E.	43	Thermodynamics	2		2
*M. E.	48	Industrial Relations	2		2
Mech.	31	Applied Mechanics	3		3
Mech.	47	Mechanics of Materials	2		2
		Total	18	3	18.3

*Military or Naval Instruction is optional for Industrial Relations.

SECOND TERM

C. E.	33	Hydraulics	3		3
E. E.	16	Laboratory	1	7	2.7
E. E.	188	Alternating Current Circuits	5		5
M. E.	14	Machine Shop		3	1
M. E.	45	Instruments and Fuels Laboratory	1	3	1.3
M. E.	77	Power Plant Engineering	3		3
*Mech.	40	Applied Mechanics	2		2
		Total	15	13	18

*Military or Naval Instruction is optional for Mechanics.

SENIOR YEAR

FIRST TERM

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
E. E.	27	Seminar	1		1
*E. E.	49	Telephony	2		2
E. E.	117	E. E. Laboratory	1.5	6.5	2.7
E. E.	130	Transmission	3		3
E. E.	133	Radio Engineering	3		3
E. E.	189	A. C. Machinery	5		5
M. E.	47	Power Plant Auxiliaries Laboratory	1	3	1.3
		Total	16.5	9.5	18

*Military or Naval Instruction is optional for Telephony.

SECOND TERM

*Ch. E.	61	Metallurgy	2		2
E. E.	28	Seminar	1		1
E. E.	118	E. E. Laboratory	1.5	6.5	2.7
E. E.	190	A. C. Machinery	3		3
Eng.	45	Public Speaking	3		3
M. E.	83	Heat Power Laboratory		4	1.3
		**Electives			5
		Total			18

*Military or Naval Instruction is optional for Metallurgy.

**ELECTIVES

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
E. E.	134	Radio Engineering	3		3
E. E.	136	Radio Laboratory	1	5	2
Ec.	93	Finance	3		3
Ec.	94	Marketing	3		3
Ec.	96	Business Law	3		3
Eng.	63	Technical English	3		3

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.

E. E. 3. ELECTRICAL ENGINEERING LABORATORY. Prerequisite, E. E. 2. 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, first or second term, 1-2-1.

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

E. E. 16. ELECTRICAL ENGINEERING LABORATORY. Prerequisite, E. E. 87. 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 dealing with the theory and operation of practical local battery and common battery telephone equipment.

E. E. 23c. RADIO.

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

The practical and theoretical consideration of receiving and transmitting circuits.

E. E. 27, 27c. SEMINAR.

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.

E. E. 28, 28c. SEMINAR.

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.

E. E. 39c. ALTERNATING CURRENT MACHINERY. Prerequisite, E. E. 38c.

Co-operative course, E. E. Senior, first term, 5-0-3.3.

The applications and characteristics of rotary converters and induction motors.

E. E. 40. APPLIED ELECTRICITY. Prerequisite, Physics 25.

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

Some of the principles of electric and magnetic circuits, and the applications of direct current machinery.

E. E. 41. APPLIED ELECTRICITY. Prerequisite, E. E. 40, Math. 24.

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

The elementary principles of circuits and the applications of alternating current machinery.

E. E. 43. ELECTRICAL ENGINEERING LABORATORY. Parallel E. E. 41. 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. 47c. Electrical Engineering Laboratory. Prerequisite, E. E. 46c. Parallel E. E. 39c. Fee $3.00.

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.

E. E. 50c. Telephony. Prerequisite, E. E. 39c.

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. 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. 71c. Applied Electricity. Prerequisite, Physics 35c.

Senior, Civil, Textile, and Ch. E. Co-operative, first term, 4-0-2.6.

Some of the fundamental principles of direct and alternating current machines.

E. E. 74c. Electrical Engineering Laboratory. Prerequisite, E. E. 71c. Fee $2.00.

Senior, Civil, Textile, and Ch. E. Co-operative, second term, 0-4-1.

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

E. E. 77. Applied Electricity. Prerequisites, Math. 23, Phys. 25.

Junior M. E., second term, 3-0-3.

Some of the principles of electric and magnetic circuits, and the applications of direct current machinery.

E. E. 78. Applied Electricity. Prerequisite, E. E. 77. Fee $2.00.

Senior M. E., first term, 2-3-3.

The elementary principles of circuits and the applications of alternating current machinery. Experiments are performed in the laboratory with direct and alternating current machinery.

E. E. 81c. Electrical Engineering Laboratory. Prerequisite, E. E. 92c. Fee $2.00.

Co-operative course, Junior E. E., first term, 1-5-1.4.

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

E. E. 82c. Electrical Engineering Laboratory. Prerequisites, E. E. 81c and E. E. 92c. Fee $2.00.

Co-operative course, Junior E. E., second term, 1-5-1.4.

A continuation of E. E. 81c.

E. E. 83c. Electrical Engineering Laboratory. Parallel or after E. E. 95c. Prerequisite, E. E. 81c. Fee $3.00.

Co-operative course, Senior E. E., first term, 1-7-1.8.

A course consisting of experiments on single-phase and three-phase circuits, and the characteristics, efficiency, and regulation of transformers and synchronous generators.

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, 1-7-1.8.

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, 1-7-1.8.

A course consisting of experiments on single-phase and polyphase motors, rectifiers, and transmission lines.

E. E. 87. Principles of Electrical Engineering. Prerequisites, Physics 24 and Math. 23.

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.

E. E. 92c. Principles of Direct Current Machinery. Prerequisite, E. E. 91c.

Co-operative course, Pre-Junior E. E., second term, 4-0-2.6.

The principles, characteristics, and applications of direct current machinery.

E. E. 93c. Alternating Current Circuits. Prerequisites, E. E. 91c, Math. 33c.

Co-operative course, Junior E. E., first term, 4-0-2.6.

The principles of single-phase and polyphase circuits.

E. E. 94c. Alternating Current Circuits. Prerequisite, E. E. 93c.

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, 4-0-2.6.

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, 3-0-2.

A study of induction motors and rectifiers.

E. E. 117. Electrical Engineering Laboratory. Parallel or after E. E. 189. Prerequisite, E. E. 16. 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.

E. E. 118. Electrical Engineering Laboratory. Parallel or after E. E. 190. Prerequisite E. E. 16. 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.

E. E. 130. Electrical Transmission of Power. Parallel E. E. 189.

Senior E. E., first 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.

E. E. 133, 133c. Radio Engineering Principles. Prerequisite, E. E. 188, or E. E. 94c.

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.

E. E. 134, 134c. Radio Engineering Principles. Prerequisite, E. E. 133.

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.

E. E. 136, 136c. Radio Laboratory. Parallel or after E. E. 134. Fee $3.00.

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.

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.

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 Professors Weber* and Narmore; Assistant Professors Brown and Mock; Instructors Bogle, Hill, Lewis, Jacobs and Vidosic.

ENGINEERING DRAWING

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

Drawing 5. Graphic Charts and Graphs.

Freshman, I. M., first term, 0-6-2.

This course covers lettering, and the theory and construction of charts and graphs used to illustrate production and business trends.

Drawing 6. Blue Print Reading.

Freshman, I. M., second term, 0-6-2. Prerequisite, Dr. 5.

A course covering the theory and construction of simple orthographic projection, and blue print reading.

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.

*On leave Sept. 1937 to Sept. 1938.

DRAWING 23. ENGINEERING DRAWING.

First term, Sophomore, M. E., 0-6-2. Prerequisite, Dr. 10.

All the work of Dr. 25 and Dr. 26 in one term.

DRAWING 25 and 25c. ENGINEERING DRAWING.

Dr. 25. First term, Sophomore, G. E., M. E., 0-3-1. Prerequisite, Dr. 10.

Dr. 25c. First term, Sophomore Co-op (except C. E. and Ch. 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.

DRAWING 26 and 26c. ENGINEERING DRAWING.

Dr. 26. Second Term, Sophomore, G. E., M. E., 0-3-1. Prerequisite, Dr. 25.

Dr. 26c. Second term, Co-op, Sophomore (Except C. E. and Ch. 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

MECH. 29. ELEMENTARY APPLIED MECHANICS. Prerequisites, Phys. 21; Math. 23.

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: Elements of statics; laws of equilibrium with application to machines and structures; symmetrical and unsymmetrical suspension of parabolic and catenary cables; kinematics and kinetics of rectilinear and curvilinear motion of particles and bodies.

MECH. 33. APPLIED MECHANICS. Prerequisites, Phys. 21; Math. 23; Arch. 13.

Junior Architects (option No. 2), first term, 3-3-4.

Class work, Mech. 35; Laboratory, Mech. 39.

MECH. 35. APPLIED MECHANICS. Prerequisites, Phys. 27; Math 23; Math. 24, or concurrently.

Junior Ch. E., first term, 3-0-3.

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 pressure; Analysis of stresses in simple riveted and welded joints; Torsional stresses in circular shafts.

MECH. 36. APPLIED MECHANICS. Prerequisites, Mech. 33 or 35.

Junior Ch. E. and Architects (option No. 2), 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 A. E., C. E., G. E., M. E., 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.

MECH. 40, 40c. APPLIED MECHANICS. Prerequisite, Mech. 31 or 39.

Junior A. E., Cer., E. E., G. E., M. E., second term, 2-0-2.

Junior Co-Op., except T. E., first term, 3-0-2. (Mech. 40c.)

Topics of study: Kinetics of plane motion; work, power, and energy; impulse and momentum; the general case of rotation; balancing of rigid bodies; the gyroscope.

MECH. 42. MECHANICS OF MATERIALS.

Junior Arch, Option No. 1. Prerequisite, Math. 17, second term, 3-0-3.

Topics of study: Moments and shears in simple and continuous beams; flexure formula; a brief study of column design; and resolution and composition of forces with especial reference to trusses.

MECH. 47, 47c. MECHANICS OF MATERIALS. Prerequisite, Mech. 31 or 39, or concurrently.

Junior A. E., Cer., C. E., E. E., G. E., M. E., first term, 2-0-2.

Junior Co-Op., Ch. E., C. 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.

MECH. 48, 48c. MECHANICS OF MATERIALS. Prerequisite, Mech. 47.

Junior A. E., C. E., G. E., M. E., second term, 3-0-3.

Junior Co-Op., C. E., M. E., second 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 170 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, PATTERSON, COMER, AND CRANFILL.

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 Freshmen 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 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.

Text: To be announced.

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.

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.

Texts: *An Anthology of World Literature,* Buck; *Art Book;* selected English classics.

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: *An Anthology of World Literature,* Buck; selected English classics.

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.

Text: Quinn, Baugh & Howe's *The Literature of America.* Not given 1937-38.

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.

Text: Quinn, Baugh & Howe's *The Literature of America.* Not given 1937-38.

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.

In Speech Laboratory the student will record his voice and receive instruction in the correction of his speech habits. Fee, $1.50.

Text: Folk and Walker: *Outline for Public Speaking.*

ENGLISH 49. RADIO SPEAKING.

Juniors and Seniors, one term, 3-0-3. Prerequisite, English 45. Admission by consent of instructor. The principles and practice of radio speaking, including the preparation of manuscript, will be studied. Recordings of the student's voice will be made at frequent intervals. Fee, $2.00.

Text: Abbott's *Handbook of Broadcasting.*

*Taught in extension.

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 a study of the basic technique of the art and of the principal poetic forms and by readings in good English poetry.

Text: To be announced. Not given 1937-38.

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.

ENGLISH 54. ELIZABETHAN DRAMA.

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

Starting with a hurried review of the history of the drama, the course proceeds to a careful study of Shakespeare, whose work fills the larger part of the course. The minor Elizabethan playwrights and those of the Restoration are glanced at in the class room and in the collateral reading.

Texts: Complete edition of *Shakespeare's Plays;* other selected plays to be announced.

ENGLISH 61. THE ENGLISH NOVEL.

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

This course comprises a brief survey of the general history of the novel in England and an intensive study of certain representative novels written since the time of Scott. Lectures are supplemented by extensive parallel reading and by oral and written quizzes and reports.

ENGLISH 63. TECHNICAL ENGLISH. Prerequisite, English 11 and 12.

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

The course seeks to give a special training in those forms of composition which are specifically demanded of the engineer—technical papers, reports, business letters.

Text: To be announced.

COURSES IN ENGLISH IN THE CO-OPERATIVE DEPARTMENT

Eng. 11c, Eng. 12c, Eng. 33c, Eng. 34c, and Eng. 45c are, in content, identical with Eng. 11, Eng. 12, Eng. 33, Eng. 34, and Eng. 45.

NON-CREDIT COURSES

ENGLISH 9, 10.

English 9 is designed to meet the needs of foreign students. English 10 is for students unprepared to take regular college Freshman English. Both are non-credit courses.

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 51

SOPHOMORE YEAR

FIRST TERM

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Dr.	25	Engineering Drawing		3	1
Eng.	33	Humanities	3		3
Math.	23	Calculus	5		5
M. E.	16	Machine Laboratory		6	2
Phys.	27	Physics	5	3	6
R.O.T.C.	3	Military or Naval Instruction		5	1.5
		Total	13	17	18.5

SECOND TERM

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Dr.	26	Engineering Drawing		3	1
Eng.	34	Humanities	3		3
Math.	24	Calculus	5		5
M. E.	2	Wood Laboratory		6	2
Phys.	28	Physics	5	3	6
R.O.T.C.	4	Military or Naval Instruction		5	1.5
		Total	13	17	18.5

JUNIOR YEAR

FIRST TERM

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
C. E.	23	Plane Surveying	2	6	4
Ec.	24	Engineering Economics	3		3
Math.	136	Differential Equations	3		3
Mech.	39	Applied Mechanics	3	3	4
Mech.	47	Mechanics of Materials	2		2
		Approved Elective	3		3
		Total	16	9	19

Second Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
C. E.	33	Hydraulics	3		3
E. E.	77	Applied Electricity	3		3
M. E.	44	Thermodynamics	3		3
M. E.	45	Instruments and Fuels Laboratory	1	3	1.3
Mech.	40	Applied Mechanics	2		2
Mech.	48	Mechanics of Materials	3		3
		Approved Elective	3		3
		Total	18	3	18.3

SENIOR YEAR
Option No. 1

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ch. E.	67	Metallurgy	3		3
C. E.	153	Framed Structures	3	3	4
C. E.	155	Reinforced Concrete	3	3	4
E. E.	78	Applied Electricity	2	3	3
Eng.	63	Technical English	3		3
		Approved Elective	2		2
		Total	16	9	19

Second Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
C. E.	156	Concrete Structures	2	3	3
Eng.	45	Public Speaking	3		3
M. E.	47	Power Auxiliaries Laboratory	1	3	1.3
M. E.	77	Steam Power Engineering	3		3
M. E.	161	Machine Design	5	3	6
		Approved Elective	2		2
		Total	16	9	18.3

SENIOR YEAR
Option No. 2

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
A. E.	131	Aerodynamics of the Airplane	5		5
A. E.	133	Theory of Aircraft Structures	3		3
A. E.	141	Airplane Design I		9	3
E. E.	78	Applied Electricity	2	3	3
Eng.	63	Technical English	3		3
		Approved Elective	2		2
		Total	15	12	19

Second Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
A. E.	134	Theory of Aircraft Structures	3		3
A. E.	142	Airplane Design II		9	3
Ch. E.	67	Metallurgy	3		3
C. E.	75	Materials of Construction	2		2
Eng.	45	Public Speaking	3		3
M. E.	57	Materials Laboratory	1	3	1.3
		Adv. R. O. T. C. or M. E. 77	3		3
		Total	15	12	18.3

Approved Electives: Adv. R. O. T. C., Biol. 38, Ec. 96, Engr. 102, Geol. 41, M. E. 22.

GEOLOGY

PROFESSOR GIBSON

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. 37. ECONOMIC GEOGRAPHY.

A course of lectures; elective for Juniors and Seniors, 3-0-3.

GEOL. 41, 42. GENERAL GEOLOGY. Prerequisites, Chem. 3, 4; Phys. 23 and 24; C. E. 21 or 23.

41, Juniors in C. E., Cer., Chem. 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. 3-0-3.

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.

INDUSTRIAL MANAGEMENT

FRESHMAN YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	3	Inorganic Chemistry	4	3	4
Dr.	5	Graphic Charts and Graphs		6	2
Eng.	11	Composition and Rhetoric	3		3
Math.	17	Elementary Functions	5	1	5
M. L.		French, Spanish, or German			
		or			
S. S.	11	Social Science	3		3
		or			
S. S.	21	English Economic History			
R.O.T.C.	1	Military		5	1.5
		Total	15	15	18.5

Second Term

Chem.	4	Inorganic Chemistry	4	3	4
Dr.	6	Blue Print Reading		6	2
Eng.	12	Composition and Rhetoric	3		3
Math.	18	Analytical Geometry	5	1	5
M. L.		French, Spanish, or German			
		or			
S. S.	22	American Economic History	3		3
R.O.T.C.	2	Military		5	1.5
		Total	13	15	18.5

INDUSTRIAL MANAGEMENT

SOPHOMORE YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Biol.	45	General Zoology	3	4	4.3
Ec.	21	Economics	3		3
Eng.	33	Humanities	3		3
Eng.	45	Public Speaking	3		3
Phys.	21	Physics	3	3	4
R.O.T.C.	3	Military		5	1.5
		Total	15	12	18.8

Second Term

Biol.	46	Vetebrate Zoology	3	4	4.3
Ec.	22	Economics	3		3
Eng.	34	Humanities	3		3
Math.	20	Mathematics of Finance	3		3
Phys.	22	Physics	3	3	4
R.O.T.C.	4	Military		5	1.5
		Total	15	12	18.8

JUNIOR YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ec.	33	Accounting	3	3	4
Ec.	37	Business Law	3		3
Biol.	51	Human Physiology	3		3
Geol.	41	General Geology	3		3
M. E.	61	Industrial Organization	3		3
M. E.	1	Wood Laboratory		3	1
		Electives			2
		Total	15	6	19

Second Term

C. E.	36	Economic Selection	2		2
Ec.	34	Accounting	3	3	4
Ec.	38	Business Law	3		3
Eng.	63	Technical English	3		3
Geol.	132	Economic Geology	3		3
M. E.	14	Machine Laboratory		3	1
		Elective			2
		Total	14	6	18

SENIOR YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ec.	41	Distribution of Products	3		3
Ec.	45	Industrial Accounting	2		2
Ec.	93	Corporation Finance	3		3
M. E.	8	Foundry and Welding		3	1
M. E.	48	Industrial Relations	2		2
M. E.	152	Industrial Management	3		3
		Electives			4
		Total	13	3	18

Second Term

Ec.	42	Distribution of Products	3		3
Ec.	44	Investments	3		3
Ec.	46	Industrial Accounting	2		2
Ec.	48	Statistics	3		3
E. E.	12	Electrical Machinery		3	1
M. E.	154	Industrial Management	3		3
		Electives			3
		Total	14	3	18

Electives may be chosen, subject to required prerequisites, and approval of the director.

DEPARTMENT OF MATHEMATICS

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

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.*

Math. 13. Analytic Geometry. Prerequisite, Math. 12.

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.*

MATH. 17. ELEMENTARY FUNCTIONS. Prerequisite, Entrance Mathematics.

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.*

MATH. 18. ANALYTIC GEOMETRY. Prerequisite, Math. 17.

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.*

MATH. 20. MATHEMATICS OF FINANCE. Prerequisite, Math. 17.

Sophomore, Industrial Management, second 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. Especial attention is given to practical problems of frequent occurrence in actual business transactions.

Text: Rietz, Crathorne and Rietz, *Mathematics of Finance.*

MATH. 23. DIFFERENTIAL CALCULUS. Prerequisite, Math. 18.

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. 39. INTRODUCTION TO STATISTICAL METHODS.

Junior I. M. Elective, 3-0-3.

An introduction to the mathematics of elementary statistics.

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 171.

DEPARTMENT OF MECHANICAL ENGINEERING

PROFESSORS KING, DUNKIN, MASON, HOWELL AND SWEIGERT; ASSOCIATE PROFESSORS TROTTER, HOLLAND, AND HARRELSON; ASSISTANT PROFESSOR HINTON; INSTRUCTORS CASE, MARTINDALE, HENIKA, VAN HOUTEN, NORMAN, TOPHAM, FOSTER, WILCOX, ALLEN, AND HARRISON, AND ASSISTANTS.

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 Engineering. 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.

COURSE IN MECHANICAL ENGINEERING

FRESHMAN YEAR

See page 51.

SOPHOMORE YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Dr.	23	Engineering Drawing		6	2
Eng.	33	Humanities	3		3
Math.	23	Calculus	5		5
M. E.	2 or 16	Wood or Machine Laboratory		6	2
Phys.	27	Physics	5	3	6
R.O.T.C.	3	Military or Navy		5	1.5
		Total	13	20	19.5

Second Term

C. E.	21	Surveying	1	3	2
Eng.	34	Humanities	3		3
Math.	24	Calculus	5		5
M. E.	16 or 2	Machine or Wood Laboratory		6	2
Phys.	28	Physics	5	3	6
R.O.T.C.	4	Military or Navy		5	1.5
		Total	14	17	19.5

JUNIOR YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem. E.	67	Ferrous Metallurgy	3		3
C. E.	75	Materials of Construction (Mil.)	2	0	2
C. E.	33	Hydraulics	3	0	3
M. E.	17	Machine Laboratory	0	3	1
M. E.	41	Thermodynamics	3	0	3
M. E.	45	Inst. and Fuels Laboratory	1	3	1.3
Mech.	39	Mechanics	3	3	4
Mech.	47	Mechanics of Materials	2	0	2
		Total	17	9	19.3

JUNIOR YEAR

Second Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
E. E.	77	Applied Electricity	3		3
M. E.	7	Foundry (Mil.)		3	1
M. E.	22	Heat Treating and Welding Laboratory	1	8	3
M. E.	47	Power Auxiliaries Laboratory	1	3	1.3
M. E.	58	Seminar	1		0.3
M. E.	65	Power Plant Engineering	4		4
M. E.	140	Advanced Thermodynamics	2		2
Mech.	40	Mechanics	2		2
Mech.	48	Mechanics of Materials	3		3
		Total	17	14	19.6

SENIOR YEAR

General Option

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
E. E.	78	Applied Electricity	2	3	3
M. E.	59	Seminar	1		0.3
M. E.	83	Heat Power Laboratory		4	1.3
M. E.	155	Organization and Management	3		3
M. E.	161	Machine Design	5	3	6
M. E.	166	Internal Combustion Engines	3		3
Elective		R.O.T.C. Elective	2		2
		Total	16	10	18.6

Second Term

Eng.	45	Public Speaking	3		3
M. E.	60	Seminar	1		0.3
M. E.	84	Heat Power Laboratory		4	1.3
M. E.	162	Machine Design	4	3	5
M. E.	170	Refrigeration, Heating and Ventilation	5		5
Elective		Engineering Subject	2		2
Elective		R.O.T.C. Elective	2		2
		Total	17	7	18.6

SENIOR YEAR

Industrial Engineering Option

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
E. E.	78	Applied Electricity	2	3	3
M. E.	59	Seminar	1		0.3
M. E.	83	Heat Power Laboratory		4	1.3
M. E.	155	Organization and Management	3		3
M. E.	161	Machine Design	5	3	6
M. E.	169	Factory Building Equipment	3		3
Elective		R.O.T.C. Elective	2		2
		Total	16	10	18.6

Second Term

Eng.	45	Public Speaking	3		3
M. E.	60	Seminar	1		0.3
M. E.	84	Heat Power Laboratory		4	1.3
M. E.	148	Industrial Relations	2		2
M. E.	153	Time and Motion Study	1	3	2
M. E.	156	Management Engineering	3		3
M. E.	162	Machine Design	4	3	5
Elective		R.O.T.C. Elective	2		2
		Total	16	10	18.6

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

COURSE	NO.	SUBJECT
Ec.	94	Survey Course in Business
Ec.	24	General Economics
M. E.	49	Mechanical Engineering Special Problems
M. E.	172	Steam Turbines
M. E.	95	Mechanical Engineering Laboratory
Math.	136	Differential Equations
Ec.	21	Economics
Eng.	63	Technical English
Geol.	41	General Geology

Second Term

Ec.	95	Distribution of Manufactured Products
M. E.	89 & 94	Internal Combustion and Aeronautical Engine Laboratory
M. E.	96	Mechanical Engineering Laboratory
M. E.	50	Mechanical Engineering Special Problems
M. E.	98	Steam Locomotives
M. E.	148a	Industrial Relations
M. E.	174	Power Plant Design
M. E.	182	Motor Vehicles
Ec.	22	Economics
Eng.	63	Technical English
Phys.	190	High Temperature Measurements
C. E.	61	Contracts and Specifications

COURSES OF INSTRUCTION

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

The following courses are suitable for undergraduate credits only.

Note: Course numbers followed by the letter "c" are for co-operative students only.

M. E. 1. Wood Laboratory.

Elective either term, 0-3-1.

This course consists of instruction in the proper care and use of woodworking tools, machines and their safe operation, in benchwork, turning and elementary cabinet work, giving a thorough understanding of the fundamental principles of woodwork.

M. E. 2. Wood Laboratory.

Sophomore M. E., first or second term, 0-6-2.

Sophomore Gen. Eng., first or second term, 0-6-2.

The practical applications are confined to jointmaking with different woods, gluing, turning and elements of finishing. The last half of the course deals with pattern work and the use of pattern making tools.

M. E. 5. Heat Treating Laboratory. No prerequisites.

Junior E. E., first term, 1-3-1.3.

This subject includes the operation of normalizing, annealing, case hardening (or carburizing), hardening, tempering and drawing of steels. Tests are made of specimens of heat treated steel alloys and non-ferrous metals as to both strength and machining ability. Microscopic examinations and various mechanical proofs are used to check up on such treatments.

M. E. 7 AND M. E. 7c. FOUNDRY LABORATORY.

Junior M. E., second term, 0-3-1.

Pre-Junior 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.

Junior C. E., second term, 0-3-1.

Pre-Junior C. E. Co-op., first term, 0-3-0.7.

Senior E. E. Co-op., first term, 0-6-1.4.

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 crystaline structure and the effects of heat upon the various metals as a result of the various procedures in use.

M. E. 14. MACHINE LABORATORY.

Junior 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 building electrical motors.

M. E. 16 AND M. E. 16c. MACHINE LABORATORY.

Sophomore A. E., M. E., T. E., first or second term, 0-6-2.

Junior M. E. Co-op., first term, 2-6-2.

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.

M. E. 18. MACHINE LABORATORY. Prerequisite, M. E. 17.

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 Ch. E. 67. Fee $10.00.

Junior M. E., second term, 1-8-3.

Pre-Junior M. E. Co-op., second term, 2-8-2.3.

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.

M. E. 23c. PATTERN MAKING.

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

This course takes up at once the subject of materials used for pattern making, both wood and metal. Lectures are given on pattern making, layouts and methods used in commercial shops for the rapid production of castings.

M. E. 24. MACHINE TOOLS.

I. 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 to manufacturing plants using both old and modern methods of production.

M. E. 25. CABINET MAKING AND FINISHING. Prerequisite, M. E. 2.

Elective first 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. 37c KINEMATICS OF MECHANISM. Prerequisites, all freshman drawing.

Junior A. E., T. E., second term, 2-3-3.

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: 1937-38, Guillet, *Kinematics and Mechanism.*

M. E. 39c. THERMODYNAMICS. Prerequisites, Physics 35c and Math. 33c or parallel.

Junior M. E. Co-ops, first term 5-0-3.3.

This course embraces a study of engineering thermodynamics. The fundamental laws are developed and the properties of fluids are studied.

Text: 1937-38, Kiefer and Stuart, *Principles of Engineering Thermodynamics.*

M. E. 40c. THERMODYNAMICS. Prerequisite, M. E. 39c.

Junior M. E. Co-ops, second term, 3-0-2.0.

This course is a continuation of M. E. 39c, dealing with the practical application of engineering thermodynamics to air compressors, internal combustion engines, vapor engines, refrigeration cycles, etc.

Text: Same as for 39c.

M. E. 41. THERMODYNAMICS. Prerequisite, Physics 28, Math. 24.

Junior M. E., first term, 3-0-3.

This course embraces a study of engineering thermodynamics. The fundamental laws are developed and the properties of fluids are studied.

Text: 1937-38, Kiefer and Stuart, *Principles of Engineering Thermodynamics.*

M. E. 43, M.E. 43c. THERMODYNAMICS. Prerequisites, Physics 28 or 35c and Math. 24 or 33c or parallel.

Junior E. E., first term, 2-0-2.

Senior T. E., option I, first term 2-0-2.

Junior Ch. E. 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: 1937-38, Young and Young, *Elementary Engineering Thermodynamics, and Ebaugh's Elementary Engineering Thermodynamics.*

M. E. 44, M. E. 44c. THERMODYNAMICS. Prerequisites, Physics 28 or 35c and Math 24 or 33c.

Junior C. E., second term, 3-0-3.

Junior Gen. Eng., 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.

Text: 1937-38, Kiefer and Stuart, *Principles of Engineering Thermodynamics.*

M. E. 45, 45c. INSTRUMENTS AND FUELS LABORATORY. Prerequisite or parallel, either M. E. 41, 39c, 43, 43c, 44 or 44c. Fee $1.75.

Senior T. E., option I and Junior M. E., first term, 1-3-1.3.

Junior E. E., G. E., second term, 1-3-1.3.

Junior C E., and M. E. Co-ops, first term, 1-3-1.

Junior E. E., and T. E. Co-ops, second term, 1-3-1.

Calibration of instruments; analysis of gaseous, liquid and solid fuels; tests of lubricating oils.

M. E. 47, 47c. POWER PLANT AUXILIARIES. Prerequisite, C. E. 33, 33c, M. E. 45, 45c. Fee $2.00.

Senior E. E., first term, 1-3-1.3.

Senior G. E., option I and Junior M. E., second term, 1-3-1.3.

Senior E. E. Co-ops, first term, 1-3-1.

Junior M. E. Co-ops, second term, 1-3-1.

Tests of apparatus used as auxiliary devices such as pumps, water metering devices, steam calorimeters and an economy test of a steam prime mover.

M. E. 48, 48c. INDUSTRIAL RELATIONS. Prerequisite, Junior standing.

Junior E. E., Senior I. M., first term, 2-0-2.

Junior M. E. Co-ops., second term, 3-0-2.

See M. E. 148 for course description.

M. E. 49, M. E. 49c, M. E. 50, M. E. 50c. MECHANICAL ENGINEERING SPECIAL.

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.

This course provides an outlet for the student fitted for original or research work. Opportunity is provided for him to determine his aptitude along various lines of endeavor. Only those students who have shown by their previous work that they can qualify and are in the upper third of their class are permitted to elect this course. They may elect any subject dealing with the field of Mechanical Engineering theory or practice.

M. E. 53c. TIME AND MOTION STUDY.

Junior M. E. Co-ops, first term, 1-3-1.3.

This course includes the making of time and motion studies, the analysis and interpretation of data derived from them, the derivation of formulae and plotting of curves for the prediction of future results. The use of time studies as a tool of management and their practical application.

M. E. 55c. ORGANIZATION AND MANAGEMENT. Prerequisite, Pre-Junior standing.

Senior M. E. Co-op, first term, 4-0-2.6.

See M. E. 155 for course description.

M. E. 56, 56c. HYDRAULIC LABORATORY. Prerequisite, C. E. 33, 33c. Fee $1.75.

Senior C. E., second term, 1-3-1.3.

Junior C. E. Co-ops, second term, 1-3-1.

The calibration of nozzles, orifices, pitot tubes, weirs, water meters of different types; the testing of pumps, hydraulic rams, and water wheels; the flow of water in pipes.

M. E. 57, 57c. MATERIALS LABORATORY. Prerequisite, Mech. 47, 47c, 48 and 48c. Fee $2.25.

Senior Arch. option II and C. E., first term, 1-3-1.3.

Senior G. E., option II, second term 1-3-1.3.

Senior C. E. Co-ops, first term, 1-3-1.

The testing of strength of materials in compression, cross bending, hardness, shear, tension, and torsion; laboratory determination of the stresses in reinforced concrete members and steel structures; commercial tests of structual materials.

M. E. 58, 59, 60. SEMINAR.

M. E. 58c, 59c, 60c.

Junior and Senior M. E., and Junior and Senior M. E. Co-op.

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, one hour per week is set aside for their use. Members hold their meetings under the dirction 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.

Text: 1937-38, Maynard and Associates, *An Introduction to Management.*

M. E. 65. POWER PLANT ENGINEERING. Prerequisite, Math. 24, Physics 28, M. E. 41 and 140 parallel.

Junior M. E., second term, 4-0-4.

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: 1937-38, Butterfield, Jennings and Luce, *Steam and Gas Engineering.*

M. E. 66c. INTERNAL COMBUSTION ENGINES. Prerequisite, M. E. 40c.

Senior M. E. Co-op., first term, 3-0-2.

See M. E. 166 for course description.

M. E. 68c. POWER PLANT ENGINEERING. Prerequisite, M. E. 39c.

Junior M. E. Co-ops, second term, 5-0-3.3.

See M. E. 65 for description of this course.

M. E. 69. THE MECHANICAL EQUIPMENT OF BUILDINGS.

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.

Senior Chem. E., second term, 4-0-4.

This course will embrace the fundamentals of engineering thermodynamics, heat engines and power plants, with laboratory work parallel with the classroom instruction.

M. E. 74, 74c. HEAT POWER LABORATORY. Prerequisite either M. E. 73 or M. E. 77c parallel. Fee $2.50.

Senior Ch. E., second term, 0-3-1.

Senior Ch. E. Co-ops, second term, 1-3-1.

Calibration of instruments, steam calorimeters, boiler testing, steam engine economy, steam pumps, internal combustion engines, air conditioning, and refrigeration machinery.

M. E. 77, M. E. 77c. ELEMENTARY STEAM POWER ENGINEERING. Prerequisites, M. E. 43, M. E. 43c or M. E. 44.

Senior Gen. Eng., Cer. E., E. E., Ch. E., first term, 3-0-3.

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 Ch. E. 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: 1937-38, Butterfield, Jennings and Luce, *Steam and Gas Engineering.*

M. E. 79c. MACHINE DESIGN. Prerequisite, Mech. 40c and 48c.

Senior M. E. Co-ops, first term, 3-0-2.

This course includes an analysis of motions and forces occurring in gearing, cams, belts, chains and linkages, and the graphical determination of velocities, accelerations and relative motions in mechanisms. Fundamental principles underlying the design of machines are started.

M. E. 80c. MACHINE DESIGN. Prerequisite, M. E. 79c.

Senior M. E. Co-ops, second term, 5-0-3.3.

The fundamental principles of the design of machines is continued, and the design of machine parts or structures are taken up. Consideration is given to the practical questions involved.

M. E. 81c. MACHINE DESIGN. Prerequisite, M. E. 80c.

Senior M. E. Co-ops, third term, 5-3-4.

The continuation of M. E. 80c which takes up the solution of many problems in machine design and the use of graphic methods for determining stresses in machine parts. The data for many of these problems are taken directly from existing machines.

M. E. 82c. AUTOMOTIVE ENGINEERING. Prerequisites, M. E. 66c, M. E. 81c parallel.

Senior M. E. Co-op, third term, elective, 3-0-2.

See M. E. 182 for course description.

M. E. 83. HEAT POWER LABORATORY. Prerequisites, M. E. 43, 45, 65 or 77, 140. Fee $2.50.

Senior M. E., first term, 0-4-1.3.

Senior E. E., and T. E., option I, second term, 0-4-1.3.

Air compression, boiler testing, feedwater treatment, internal combustion engines, steam turbines and refrigeration machinery.

M. E. 83c. HEAT POWER LABORATORY. Prerequisite M. E. 45c, 65c or 77c. Fee $1.50.

Senior C. E., and M. E. Co-ops, first term, 0-4-1.

Senior E. E. Co-ops, second term, 0-4-1.

Air compression, coal analyses, testing of internal combustion engines, refrigeration machinery and economy test of a steam engine.

M. E. 84. HEAT POWER LABORATORY. Prerequisite, M. E. 45, 65, and 140. Fee $2.00.

Senior M. E., second term, 0-4-1.3.

Air conditioning, air meters, fans, heat transfer, pipe friction, auto engine, combustion efficiency and ignition analysis.

M. E. 86c. AERONAUTICAL ENGINES. Prerequisite, M. E. 40c.

Senior M. E. Co-op, first term, elective, 3-0-2.

See M. E. 186 for course description.

M. E. 87c. HEAT POWER LABORATORY. Prerequisite M. E. 83c. Fee $1.50.

Senior M. E. Co-ops, second term, 0-4-1.

Senior E. E. Co-ops, third term, 0-4-1.

Air conditioning, air meters, boiler testing, fans and refrigeration machinery.

M. E. 88c. HEAT POWER LABORATORY. Prerequisite M. E. 87c. Fee $1.50.

Senior M. E. Co-ops, third term, 0-4-1.

Fans, heat transfer, pipe friction, auto engine combustion efficiency and ignition analysis.

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 186. Fee $2.25.

Fifth year A. E., second term, 0-3-1.

Economy and power tests of in-line and radial type engines together with testing of fuels and lubricants.

M. E. 95, 95c. 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. 98, M. E. 98c. STEAM LOCOMOTIVES. Prerequisites, M. E. 40c, M. E. 140, M. E. 65 and M. E. 65c.

Senior M. E. Co-op., elective, 3-0-2.

Senior M. E., elective, 2-0-2.

A study of the steam locomotive as a power plant is made as well as the mechanical construction and future possibilities.

The following courses are suitable for both advanced undergraduate and graduate credit.

M. E. 140. Advanced Thermodynamics. Prerequisite, M. E. 41.

Junior M. E., second term, 2-0-2.

This course is a continuation of M. E. 41 dealing with the practical application of engineering thermodynamics. Compressors, internal combustion engine, vapor engine and refrigeration cycles are studied.

M. E. 148. Industrial Relations. Prerequisite, Junior standing.

Senior M. E., Industrial Option, second term, 2-0-2.

Study of the development of personnel administration, employment, personnel maintenance, industrial training and education, industrial health, and safety.

Text: 1937-38, Walters. Applied Personnel Administration.

M. E. 152. Industrial Management. Prerequisite, M. E. 61 or parallel.

Senior I. M., first term, 3-0-3.

The aim of this course is to set up those factors which make for a sound approach to Industrial Management. For teaching purposes the course has been broken down into two divisions: (a) Trends in Modern Industry, and (b) Problems of Managerial Control. In the first division, consideration is given to such factors as specialization, simplification, diversification, etc. In the second division, problems on the plant, raw materials, personnel and managerial control are studied.

Text: 1937-38, Robbins and Folts, *Industrial Management. A Case Book.*

M. E. 153. Time and Motion Study.

Senior M. E., first term, 1-3-2.

This course covers the making of time and motion studies, the analysis and interpretation of data derived from them, the derivation of formulas and the plotting of curves for the prediction of future results, the use of time studies as a tool of management and their practical application.

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.

Text: 1937-38, Robbins and Folts, *Industrial Management. A Case Book.*

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: 1937-38, Cornell, *Organization and Management.*

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. Prerequisite Mech. 40 and 48.

Senior M. E., first term, 5-3-6.

Senior G. E., second term, 5-3-6.

This course includes an analysis of motions and forces occurring in gearings, cams, belts, chains, linkages, and the graphical determination of velocities, accelerations and relative motion in mechanisms. Fundamental principles underlying the design of machines are started.

M. E. 162. Machine Design. Prerequisite M. E. 161.

Senior M. E., second term, 4-3-5.

This is a continuation of M. E. 161 which takes up the solution of many problems in machine design and is used on graphic methods for determining stresses in machine parts. The data for many of these problems are taken directly from existing machines.

Text: 1937-38, Faires, *Design of Machine Elements.* Faires and Wingren, *Problems on the Design of Machine Elements.*

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.

Text: 1937-38, Streeter and Lichty, *Internal Combustion Engines.*

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.

Text: 1937-38, Gay and Fawcett, *Mechanical and Electrical Equipment for Buildings.*

M. E. 170, M. E. 170c. 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: 1937-38, Severns, *Heating, Ventilating and Air Conditioning Fundamentals;* Macintire, *Refrigeration Engineering.*

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: 1937-38, 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.

Text: 1937-38, Leutwiler, *Notes on the Design of Steam Power Plants.*

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.

Fifth Year, 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 171 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

Infantry: National Defense Act, Obligation of Citizenship, Military History, Current International Situation, Military Discipline and Courtesy, Sanitation and First Aid, Organization, Map Reading and Aerial Photographs, Infantry Drill, Leadership, Rifle Marksmanship, Infantry Weapons, Scouting and Patrolling, Musketry, Combat Principles, Field Engineering, Military Law, Administration and Supply, Mechanization and Signal Communication.

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.

Signal Corps: National Defense Act and R. O. T. C. Regulations, Sanitation and First Aid, Map Reading, Military Courtesy and Customs of the Service, Military Organization, General Signal Communications, Military History and Policy, Aerial Photograph Reading, Installation—Operation and Maintenance of Field Wire Systems, Theory of Wire Communications, Installation—Operation and Maintenance of Radio Communication, Theory of Radio Communication, Signal Tactics—Combat Orders and the solution of Map Problems, Signal Corps Staff Duties, Military Law, Interior Guard Duty, Infantry Drill, Pistol Marksmanship, Military Administration and Supply and Leadership.

Ordnance: Ammunition and Explosives, Ordnance Material, Military Law and O. R. C. Regulation, Military History and Policy, Company Administration and Supply, Ordnance Field Service, Elementary Ordnance Engineering, Mechanization, Organization of Ordnance Department, Industrial Mobilization, and General Lectures.

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 m/m 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, one ten-ton 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 conconsists 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 new 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, and trousers. The cost of the uniform is $29.00 and the Government allowance is $29.00.

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:

Regular Four-Year Course

FRESHMAN YEAR	3 credit hours (1.5 per semester)
SOPHOMORE YEAR	3 credit hours (1.5 per semester)
JUNIOR YEAR	6 credit hours (3 per semester)
SENIOR YEAR	6 credit hours (3 per semester)
TOTAL	18 credit hours

Co-operative Five-Year Course

FRESHMAN YEAR	2 credit hours (1 per quarter)
SOPHOMORE YEAR	2 credit hours (1 per quarter)
PRE-JUNIOR YEAR	4 credit hours (2 per quarter)
JUNIOR YEAR	4 credit hours (2 per quarter)
SENIOR YEAR	4 credit hours (2 per quarter)
TOTAL	16 credit hours

DEPARTMENT OF MODERN LANGUAGES

Professor Crenshaw; Associate Professors Campoamor and Ervin

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, *durfen, konnen, mogen, mussen, 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 *etre 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,*

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.

Ordnance and Gunnery: Landing Force Organization, First Aid, Ships Organization and Drills, History of Development of Explosives, Guns, Armor and Projectiles, Principles of Naval Gunnery, Fire Control, Spotting and Range Keeping, Aerial Gunnery and Bombing, Defense against Aircraft, Torpedoes.

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:

FRESHMAN YEAR	3 credit hours (1.5 per semester)
SOPHOMORE YEAR	3 credit hours (1.5 per semester)
JUNIOR YEAR	6 credit hours (3 per semester)
SENIOR YEAR	6 credit hours (3 per semester)
TOTAL	18 credit hours

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 HEROD; ASSOCIATE PROFESSORS BORTELL AND BOYD; ASSISTANT PROFESSORS PROSSER, EWALT, JOHNSON, AND ROSSELOT; INSTRUCTOR MALLARY

It is the aim of the department to present work in physics in such a way that it will develop habits of accurate thinking and scientific reasoning, as well as give the student a thorough understanding of a body of organized knowledge which is fundamental to all types of engineering.

COURSES OF INSTRUCTION

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

PHYS. 21. ELEMENTARY MECHANICS AND HEAT. Prerequisite, Math. 17. Fee $3.00.

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: Eldridge, *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: Eldridge, *College Physics.*

Phys. 27. MECHANICS AND HEAT. Prerequisites, Entrance Physics and Math. 18. Fee $3.00.

Sophomore, first term, 5-3-6.*

Phys. 27 and Phys. 28 (see below), constitute a complete course in basic physics for engineers. It consists of one lecture and four recitations per week, in addition to the laboratory. The solution of a large number of problems is required, the problems being carefully chosen to illustrate and

*Students with a class average below passing may be required to attend one additional recitation per week, without credit.

emphasize fundamental principles. In working these problems, students are expected to acquire proficiency in the routine technique of finding numerical solutions, but the use of formulae as mere computing devices without an adequate understanding of the underlying principles is avoided. Both metric and British Engineering units are used. The course includes some appplications of the elements of the calculus.

The laboratory work is designed to give the student practice in the art of making precise measurements, proficiency in the manipulation of apparatus, and a more thorough familiarity with some of the concepts of physics. The theory of errors in measurements is stressed enough to give students the ability to decide under what conditions the greater expense of more precise measurements is justified.

Text: Duff, *Physics,* Eighth Edition, and supplementary problems.

Phys. 28. ELECTRICITY, SOUND, AND LIGHT. Prerequisite, Phys. 27. Fee $3.00.

Sophomore, second term, 5-3-6.*

This course is a continuation of Phys. 27.

Text: Duff, *Physics,* Eighth Edition, and supplementary problems.

Phys. 33c. MECHANICS. Prerequisites, Entrance Physics; prerequisite or concurrently with, Math. 13. Fee $2.00.

Sophomore Co-op, first term, 6-3-4.7.

Phys. 33c, Phys. 34c, and Phys. 35c (see below), constitute a complete course in basic physics for engineers, divided into three parts for co-operative students. The three parts together are equivalent to the Phys. 27-Phys. 28 combination described above.

Text: Haussmann and Slack, *Physics,* and supplementary problems.

Phys. 34c. HEAT AND ELECTRICITY. Prerequisite, Phys. 33c. Fee $2.00.

Sophomore Co-op, second term, 6-3-4.7.

A continuation of Phys. 33c.

Text: Haussmann and Slack, *Physics,* and supplementary problems.

Phys. 35c. ELECTRICITY, SOUND, AND LIGHT. Prerequisite, Phys. 34c. Fee $2.00.

Pre-Junior Co-op, first term, 4-3-3.3.

A continuation of Phys. 33c and Phys. 34c.

Text: Haussmann and Slack, *Physics,* and supplementary problems.

* See Footnote on preceding page.

Phys. 40. Acoustics and Illumination. Prerequisite, Phys. 22.

Second term, 2-0-2.

This course deals with the fundamental principles of the acoustics and the illumination of buildings.

Phys. 61. Intermediate Modern Physics. Prerequisites, Phys. 28 (or 25) and Calculus.

Senior Ch. E., second 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., second 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 Philpott, Brandon, Smith and Thompson (*Part-time*)

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.

Equipment

The textile building is of typical mill construction. Its three floors, 150 x 70 feet, contain classrooms, laboratories, library, offices, and demonstration rooms for textile equipment.

The second floor contains machinery for picking, carding, spinning, combing, twisting, winding, and warping. In addition, there is a well equipped knitting department. The first floor contains classroom, library, exhibit room, and the weaving department. The ground floor contains the dyeing department, testing laboratories, classrooms, slasher, opener and cloth rooms.

The building is served by a freight elevator, is heated by steam, and protected by automatic sprinklers. The machinery is driven by electric power on both group and unit drives.

Special Students

Provision is made in the textile department for special students who have had sufficient preparation and experience to meet the entrance requirements.

Such students may secure training in the textile subjects as offered by this department, in conjunction with such additional courses from other departments as will best fit them for the particular work in which they may wish to specialize.

A schedule and arrangement based upon previous preparation and the requirement in each case will be made upon application.

Summer Requirements

A minimum of sixty days of practical work may be required of each candidate for B. S. in Textile Engineering. This work may be done during the year before the student is admitted or between that time and graduation. Proper certification of this required work must be made by an officer of the mill in which the work is done.

Course of Study

The course of study for the Sophomore, Junior and Senior years is given in the following pages. For the Freshman year see page 51.

SOPHOMORE YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ec.	24	Economics	3		3
Eng.	33	Humanities	3		3
Math.	23	Differential Calculus	5		5
Phys.	21	Physics	3	3	4
T. E.	23	Fabric Design		3	1
T. E.	39	Weaving		3	1
T. E.	59	Yarn Manufacture, Practice		3	1
R.O.T.C.	3	Military or Navy		5	1.5
		Total	14	17	19.5

Second Term

Arch.	22	Freehand Drawing		3	1
Chem.	13	Qualitative Analysis	2	6	3
Eng.	34	Humanities	3		3
Phys.	22	Physics	3	3	4
T. E.	24	Fabric Design		3	1
T. E.	40	Weaving	3	3	4
T. E.	60	Yarn Manufacture, Practice		3	1
R.O.T.C.	4	Military or Navy		5	1.5
		Total	11	26	18.5

JUNIOR YEAR

First Term

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Chem.	26	Organic Chemistry	3	3	4
M. E.	16	Machine Lab. (Mil. Elec. 3 hrs.)		6	2
Mech.	29	Applied Mechanics	4		4
T. E.	27	Fabric Analysis		3	1
T. E.	33	Fabric Design		3	1
T. E.	45	Weaving	2	3	3
T. E.	61	Yarn Manufacture, Theory and Practice	3	3	4
		Total	12	21	19

Second Term

Chem.	27	Organic Chemistry	3	3	4
M. E.	37	Kinematics of Mechanism	2	3	3
Eng.	45	Public Speaking (Mil. Elec.)	3		3
T. E.	22	Dyeing		3	1
T. E.	28	Fabric Analysis		3	1
T. E.	34	Fabric Design		3	1
T. E.	46	Weaving	2	3	3
T. E.	62	Yarn Manufacture, Theory and Practice	3	4	4.3
		Total	13	22	20.3

SENIOR YEAR

First Term

Option No. 1

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ec.	93-94	Finance and Marketing	3		3
E. E.	2	Applied Electricity	3		3
M. E.	43	Thermodynamics	2		2
M. E.	45	Elementary Steam Laboratory	1	3	1.3
T. E.	37	Jacquard Design		3	1
T. E.	63	Yarn Manufacture, Theory and Practice	3	4	4.3
T. E.	83	Dyeing	3	3	4
		Total	15	13	18.6

Option No. 2

Ec.	93-94	Finance and Marketing	3		3
T. E.	37	Jacquard Design		3	1
T. E.	53	Weaving		3	1
T. E.	63	Yarn Manufacture, Theory and Practice	3	4	4.3
T. E.	83	Dyeing	3	3	4
T. E.	123	Advanced Design and Analysis	4	6	6
		Total	13	19	19.3

Option No. 3

Chem.	17	Quantitative Analysis	2	6	3
Ec.	93-94	Finance and Marketing	3		3
T. E.	37	Jacquard Design		3	1
T. E.	63	Yarn Manufacture, Theory and Practice	3	4	4.3
T. E.	83	Dyeing	3	3	4
T. E.	168	Textile Testing	1	2	1.5
T. E.	187	Rayon Processing	1	3	2
		Total	13	21	18.8

Second Term

Option No. 1

COURSE	NO.	SUBJECT	CLASS	LAB.	CREDIT
Ec.	95-96	Accounting and Law	3		3
E. E.	3	Electrical Engineering Laboratory		4	1.3
M. E.	83	Fuels, Materials, and Engine Laboratory		4	1.3
M. E.	77	Elementary Steam Power Engineering	3		3
T. E.	53	Weaving		3	1
T. E.	64	Yarn Manufacture, Theory and Practice	3	4	4.3
T. E.	81	Knitting	1	2	1.5
T. E.	84	Dyeing	2	3	3
T. E.	168	Textile Testing	1	2	1.5
		Total	13	22	19.9

Option No. 2

Ec.	95-96	Accounting and Law	3		3
T. E.	38	Jacquard Design		3	1
T. E.	64	Yarn Manufacture, Theory and Practice	3	4	4.3
T. E.	81	Knitting	1	2	1.5
T. E.	84	Dyeing	2	3	3
T. E.	126	Advanced Design and Analysis	4	3	5
T. E.	168	Textile Testing	1	2	1.5
		Total	14	17	19.3

Option No. 3

Chem.	18	Quantitative Analysis	1	6	2.3
Ec.	95-96	Accounting and Law	3		3
T. E.	54	Weaving		3	1
T. E.	64	Yarn Manufacture, Theory and Practice	3	4	4.3
T. E.	81	Knitting	1	2	1.5
T. E.	84	Dyeing	2	3	3
T. E.	169	Testing Laboratory Practice	1	2	1.5
T. E.	189	Rayon Processing	1		1
		Total	12	20	17.6

COURSES OF INSTRUCTION

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

T. E. 22. Dyeing.

Junior, second term, 0-3-1. Fee $2.00.

A preliminary course in bleaching and dyeing, preparatory to T. E. 83.

T. E. 23-24. Fabric Design.

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

A study is made of the foundation weaves and their derivatives, together with the construction of drafts and the uses for each weave.

T. E. 27-28. Fabric Analysis. Prerequisite, T. E. 23.

Juniors, first and second terms, 0-3-1. Fee $1.00.

Instruction in the calculations of cloth analysis. Specimens of fabrics are dissected to obtain the weave, and all other data needed to reproduce the fabric.

T. E. 33-34. Fabric Design.

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

The work begun in T. E. 23-24 is carried on through the more complex weaves, such as backed and figured weaves, ply weaves and leno weaves.

T. E. 37-38. JACQUARD DESIGN.

Seniors, (see options), 0-3-1.

The theory of jacquard designing is first studied, after which several types of designs are made. During the second term advanced work is undertaken in the composition of designs and the arrangement of figures.

T. E. 39-40, 45-46, 53-54. WEAVING.

T. E. 39, Sophomores, first term, 0-3-1.

T. E. 40, Sophomores, second term, 3-3-4.

T. E. 45-46, Juniors, first and second terms, 2-3-3.

T. E. 53-54, Seniors, (see options), 0-3-1.

Theory and practice in the construction and operation of hand, plain, automatic, and jacquard looms; together with slasher and cloth room operations.

T. E. 59-60. YARN MANUFACTURE, PRACTICE.

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

An elementary course, preparatory to T. E. 61, combining notes, sketches, and practical work upon machines to give a general idea of the processes.

T. E. 61-62, 63-64. YARN MANUFACTURE, THEORY AND PRACTICE.

T. E. 61, Juniors, first term, 3-3-4.

T. E. 62, Juniors, second term, 3-4-4.3.

T. E. 63-64, Seniors, first and second terms, 3-4-4.3.

A course combining lectures and recitations upon the machines and processes, with machine calculations and practical work in operating the machines. The four-hour laboratory courses include one hour of cotton classing, which consists of work in grading and stapling cotton according to Government Standards and regular, standard, commercial practice.

T. E. 81. KNITTING.

Seniors, (see options), 1-2-1.5.

This course is given in the form of notes, lectures, and practical work covering the construction and operation of circular latch needle hosiery machines, ribbers, and loopers. The methods involved in the production of fancy knit fabrics are also considered.

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.

T. E. 123-126. ADVANCED DESIGN AND ANALYSIS.

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.

T. E. 168. TEXTILE TESTING.

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.

T. E. 169. TESTING LABORATORY PRACTICE. Prerequisite, T. E. 168.

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.

T. Efl. 187-189. RAYON PROCESSING.

Option 3, Seniors, first term, 1-3-2; Second term, 1-0-1. 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.

UNCLASSIFIED COURSES

OR. 1. ORIENTATION.

This course is required of all freshmen, including college transfers who are classified as freshmen during the first semester. It begins at 8 a. m. Wednesday, September 14th (for 1938) in the main chapel. Placement tests are required and instruction is given in regard to registration, payment of fees, medical examinations, use of the Library, etc.

This work is continued one hour per week for the first six weeks of the semester. Lectures are given in this course on Tech Traditions, How to Study, Importance of College Record, etc.

ENGR. 2. INTRODUCTION TO ENGINEERING.

Freshmen, second term, 1-0-1.

This course is to acquaint the freshmen with the various branches of engineering and related fields, to discuss with the student the opportunity in each field, and to explain how he may best prepare himself for his chosen work. The program is carried out by means of lectures, discussion, motion pictures, and laboratory visits.

Text: *"Building an Engineering Career,"* by C. C. Williams.

ENGR. 102. ENGINEERING PROBLEMS.

Senior G. E., second term, 2-0-2.

The student is required to solve numerous problems which are representative of those types found in actual engineering practice. Special emphasis will be placed on the mathematical formulation of engineering problems.

I. E. 27. THE SCHOOL AND SOCIETY.

This course gives a comprehensive picture of the activities and needs of youths and adults in the social order, particularly those served by industrial education. Consideration is given to the function of the school, including the principles of education, in society. A comprehensive and integrated program of education with particular reference to industrial education is formulated.

PAPER AND PULP COURSES: The Georgia School of Technology expects to begin systematic training in preparation for the Paper and Pulp industry, and courses will be arranged as funds become available for this purpose.

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

A. E. 200. THESIS.

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, engines, and instruments.

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.

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. ADVANCED AIRPLANE DESIGN PROBLEMS. Prerequisites, A. E. 133, 134, 141, 142 or equivalent. (Schwartz.)

First and second terms, 0-6-2.

A study of advanced theoretical and experimental methods of structural analysis, with applications to specific design problems.

A. E. 209. THEORY OF VIBRATIONS. Prerequisites, A. E. 131, Math. 136 or equivalent. (Weems.)

First term, 3-0-3.

Analytical treatment of vibrations, with emphasis on induced stresses, and the reduction and isolation of vibrations, together with applications to aircraft problems.

A. E. 213. THEORY OF THE PROPULSIVE AIRSCREW. Prerequisite, A. E. 131, 166. (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 types of aircraft.

A. E. 215-216. GRADUATE SEMINAR.

First and second terms, 1-0-1.

Group discussion of problems encountered in the research work of graduate students and staff.

DEPARTMENT OF ARCHITECTURE

ARCH. 200. THESIS.

Second term, 0-24-8.

A thesis in design is required, for which the student writes his own program, under guidance, and completely designs the building in question, including structural design, indication of materials used, details, etc.

ARCH. 215-216. HISTORY OF ARCHITECTURE.

First and second terms, 2-0-2.

These courses consist of two seminars per week. The student does his own research work; selects and outlines under guidance a treatise on some phase of architectural history; and submits a written thesis illustrated by sketches.

ARCH. 275-276. LIFE DRAWING.

First and second terms, 0-4-1.3.

ARCH. 279-280. ARCHITECTURAL RENDERING.

First and second terms, 0-4-1.3.

Pencil, water color, or pen and ink may be used in rendering architectural forms.

DEPARTMENT OF CERAMIC ENGINEERING

CER. 200. THESIS.

CER. 201-202. CERAMIC MICROSCOPY.

First term, 3-3-4; second term, 2-6-4.

Application of the microscope to the structure and composition of ceramic bodies.

CER. 203-204. COLLOIDAL PROPERTIES OF HYDROUS ALUMINO-SILICATES.

First term, 3-3-4; second term, 3-3-4.

The physico-chemical properties of the plastic and anti-plastic hydrous 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

CH. E. or CHEM. 200. THESIS.

CH. E. or CHEM. 209-210. SEMINAR.

The graduate students meet weekly with the departmental staff and present papers on assigned topics in the literature. General discussion follows. Each semester a report will be required on the content of several books read, and parallel reading.

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. 227. INTRODUCTION TO ELECTRO-CHEMISTRY. Prerequisite, Chem. 158.

First or second term, 3-0-3.

A study of the fundamental concepts of electrolytic processes, electrode reactions, and oxidation-reduction equilibria with their practical applications.

CHEM. 243-244. PHYSICAL CHEMISTRY. Prerequisite, Chem. 158 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.

CH. E. 233-234. ORGANIC CHEMISTRY AND INDUSTRY. Prerequisite, Ch. E. 162.

First and second terms, 3-0-3.

Advanced organic chemistry is studied along with its application to the chemical industries. To be offered 1939-40.

CH. E. 239. HEAT TRANSMISSION. Prerequisite, Ch. E. 157.

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.

CH. E. 260. ADVANCED DESIGN. Prerequisite, Ch. E. 160.

Second term, 1-6-3.

A continuation of Ch. E. 160.

CH. E. 271-272 . ADVANCED CHEMICAL ENGINEERING CALCULATIONS. Prerequisite, Ch. E. 172.

First and second term, 3-0-3.

Ch. E. 172 extended.

DEPARTMENT OF CIVIL ENGINEERING

C. E. 200. THESIS.

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.

E. E. 201-202. ALTERNATING CURRENT AND ALTERNATING CURRENT MACHINERY. Prerequisites, E. E. 190, E. E. 118, and Math. 136.

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.

Stress concentration due to fillets and holes. Photo-elastic method of determining stress concentration. Stresses in thick cylinders and rotating discs. Stresses in curved bars. Beams on elastic foundation. Temperature stresses.

The theory of elastic energy. Stress analysis of redundant structures. Elastic curves as influence lines.

Mech. 207-208. Applied Elasticity. Prerequisites, Mech. 48 and Math. 136. (Weber).

The basic principles of the theory of elasticity with practical applications. Two-dimensional problems of stress and strain in rectangular and polar coordinates. Saint Venant theory of torsion. Membrane analogy. Bending of prismatical bars. Stresses in flat plates. Stability of members with thin walls.

DEPARTMENT OF MATHEMATICS

Math. 201-202. Advanced Calculus. Prerequisite, Math. 136.

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

M. E. 200. Thesis.

M. E. 201-202. Thermodynamics.

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.

M. E. 205. Heating, Ventilation and Air Conditioning.

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. 203. Fluid Flow. Prerequisite M. E. 140, C. E. 33 and all mechanics. 3-0-3.

This course is a study of the theory and applications of the properties, static and dynamic, of liquids, vapors, and gases. It includes a study of metering devices, impulse and momentum of fluids, and the flow of liquids, vapors and gases, in closed channels and around immersed bodies.

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.

M. E. 210. Automotive Engineering Design.

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.

M. E. 214-215. Industrial Engineering.

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.

DEPARTMENT OF PHYSICS

PHYS. 202. KINETIC THEORY OF GASES. Prerequisites, Phys. 25, Math. 23 and 24, and Chem. 3 and 4 or Chem. 7 and 8.

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.

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.

PHYS. 270. ADVANCED PHYSICS AND ITS APPLICATIONS. Prerequisites, Phys. 25 and Math. 23 and 24.

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.

DEPARTMENT OF TEXTILE ENGINEERING

T. E. 200. THESIS.

T. E. 222-223. DYEING. (Jones).

First and second terms, 1-3-2. Fee $2.00 each term.

This is a continuation of the regular course in Dyeing. Especial 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.

T. E. 235-236. FABRIC ANALYSIS. Prerequisite, T. E. 136. (Carmichael).

First and second terms, 0-6-2. Fee $2.00 each term.

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.

T. E. 237-238. TEXTILE DESIGN. Prerequisite, T. E. 36-37. (Carmichael).

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. 253-254. POWER WEAVING. Prerequisites, T. E. 45, 46, 53.

First and second terms, 1-3-2.

An advanced course in weaving, covering a detailed study of the mechanisms of the various types of dobby and jacquard looms, together with problems in the design and construction of original patterns.

T. E. 263-64. YARN MANUFACTURE. (Hill).

First and second terms, 1-3-2. 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. THIESEN; 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 groups, in order that they may maintain their ideals and provide construcitve 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-SECOND ANNUAL SESSION

Nine Weeks

Executive Committee: PROFESSORS SKILES, DANIEL, AND STAMY.

CALENDAR

Registration days, July 15, 16, 1938.

Recitations begin July 18 and end September 8. Absences will be recorded against students registering after July 18.

CURRICULUM AND TUITION

Below is a list of the courses to be given and the tuition and fees for each course:

Arch 1. $5.00 for each credit hour of work taken.

Chem. 0 (Non-credit)	$15.00
Chem. 3, 4	24.00
Chem. 13	20.00
Chem. 27	26.00
C. E. 21	11.00
C. E. 33	15.00
Dr. 9, 10	10.00
Dr. 25, 26	6.00
E. E. 2, 77	15.00
E. E. 3	8.50
E. E. 16, 78, 117	17.00
E. E. 188	25.00
Ec. 21, 51	15.00
Eng. 10 (Entrance English)	15.00
Eng. 11, 12, 33, 34, 45	15.00
Math. 1 (Entrance Geometry)	15.00
Math. 3 (Entrance Algebra)	15.00
Math. 17, 18, 23, 24	25.00
Math. 136	15.00
M. E. 22	25.00
M. E. 41, 37, 77, 44, 152, 155	15.00
M. E. 43, 140, 148	10.00
M. E. 45, 46, 47	8.00

M. E. 65	20.00
Mech. 31, 48	15.00
Mech. 39	21.00
Mech. 40, 47	10.00
M. L. 1, 2, 8, 14, 16	15.00
Phys. 2 (Entrance Physics)	17.00
Phys. 21, 22, 25	23.00
Phys. 27, 28	33.00
Phys. 24	27.00
T. E. 23, 24, 27, 28, 33, 39, 53, 59, 60, 61 lab	5.00
T. E. 81	7.50

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

Faculty Advisory Council: MONTGOMERY KNIGHT, D. P. SAVANT, ALFRED W. SCOTT, A. V. HENRY, C. A. JONES, HAROLD BUNGER, H. B. FRIEDMAN, 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 1937-38, twenty-four Faculty Members, three Research Fellows, twelve Research Graduate Assistants, three Student Assistants, and eight Technical Assistants were engaged, either full or part time, in the prosecution of seventeen Station problems. These projects included such items as the more efficient processing of cotton, 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 development of a new type of aircraft, improvements in the properties of rayon, the development of a new type of Diesel engine, the economic utilization of different types of local sand in concrete, new uses for the pecan, the development of textile vocational placement tests, and fundamental information concerning ionization and hydrolysis in solutions.

During June of each year a number of Research Graduate Assistantships and Scholarships carrying stipends up to $650.00 for ten months of part time work are awarded for the ensuing fiscal year. These positions 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, as outlined in a prospectus "Supremacy Through Research." Funds from external sources to finance co-operative investigations are administered in trust.

EXTENSION WORK

THE EVENING SCHOOL OF APPLIED SCIENCE

DIRECTOR, R. S. HOWELL; SECRETARY, MRS. G. B. TURNER; ADVISORY COMMITTEE, J. F. CANNON, A. A. CASE, R. S. KING

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.

FACULTY

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

ROY EARL DAVIS 415 Linwood Ave., N.E.
Motor Analysis

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, 1938-39

FALL TERM

Begins September 19, 1938. Ends January 21, 1939.

Christmas vacation: Class work will continue through Friday night, December 16, 1938, and will be resumed Monday night, January 2, 1939.

SPRING TERM

Begins January 23, 1939. Ends May 13, 1939.

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.

Aeronautics, Architecture, Auto Engineering, Building Construction, Chemistry, Civil Engineering, Electrical Engineering, Heating and Ventilating, Mechanical Engineering, Radio, Structural and Textile Engineering.

Special Courses

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.

Acetylene Welding, Aeronautics, Air Conditioning, Applied Electricity, Auto Ignition Analysis, Blue Print Reading, Ceramic Processes, Combustion of Fuels, Commercial Art, Drawing, Electric Welding, Heating and Plumbing, Highway Laboratory, Machine Shop Practice, Mathematics, Mechanics, Modern Language, Physics, Radio Service, Refrigeration, Testing Power Plant Equipment, Textiles, Water Purification and Control, Wood Working.

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.
3. Public and plant part-time 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:

Unless otherwise noted the following courses carry three hours credit:

I. E. 22. Educational Psychology. Prerequisite, I. E. 25.
I. E. 24. History of Education.
I. E. 25. Industrial Psychology.
I. E. 26. Business Psychology.
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. 62. Methods of Shop Demonstration.
I. E. 71. Practice Teaching. Two hours credit.
I. E. 72. Practice Teaching.
I. E. 142. Organization of Manual Training.
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. J. L. HENRY, MISS ZELPHA STEPHENS, AND

MISS MABLE SIMPKINS

The Joseph Brown Whitehead Memorial Hospital has been in operation twenty-eight 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) parents will be notified and will be required to pay the costs incident to such hospital care, which in rare instances may necessitate removal to a private hospital.

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. The consulting staff is always available, and welcomed.

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 CAROLYNE 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 40,000 bound volumes and some 4,000 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 4,500 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 1 P.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*
PROF. COUNT D. GIBSON.....*Secretary*

W. A. ALEXANDER
PETE BALLAS
PROF. HAROLD BUSH-BROWN
DAN H. DUPREE
LEWIS F. GORDON
PAT MUNROE
GLENN W. RAINEY
DR. LESTER RUMBLE
DR. HERMAN L. TURNER
GEORGE WINSHIP

ADMINISTRATION

JAMES W. MAY.....*General Secretary*
WILLIAM J. PROCTOR.....*Executive Secretary*
GLADYS I. HAWES.....*Office Secretary*
D. A. HOWARD.....*Student Assistant*

STUDENT OFFICERS, 1937-38

PAT MUNROE.....*President*
DAN H. DUPREE.....*Vice-President*
PETE BALLAS.....*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 student roomers 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 1937-38 are:

J. L. Chivington, *President*
O. C. McLean, *Vice-President*
R. E. Anderson, *Secretary*
J. U. Nixon, *Treasurer*

Seniors

J. L. Chivington
A. E. Jones
O. C. McLean
J. P. Morgan
J. U. Nixon
T. F. Sims

Juniors

R. E. Anderson
C. L. Belcher
R. G. Cushing
W. G. Thrash

Sophomores

W. F. Manry
C. N. Mayo

Freshman

L. N. Perkerson

Co-operative Representatives

P. J. Mitchell
M. G. Mitchell
C. F. Crumbley
W. H. Garvin

Ex-officio Members

J. B. Boy, *Editor of Technique*
P. Munroe, *President of Y. M. C. A.*
F. F. Phillips, *President of Interfraternity Council*
R. W. Murphy, *President of Junior Class*
C. R. Wood, *President of Sophomore Class*

GEORGIA TECH ATHLETIC ASSOCIATION

BOARD OF DIRECTORS

DR. M. L. BRITTAIN, *Chairman.*

DR. J. B. CRENSHAW.

PROF. FLOYD FIELD, *Secretary and Treasurer.*

DEAN W. V. SKILES.

PROF. A. H. ARMSTRONG, *Faculty Chairman of Athletics and Business Manager.*

PROF. H. A. WYCKOFF

COACH W. A. ALEXANDER, *Advisory Member without vote.*

MR. GEORGE W. MCCARTY, JR.

MR. R. T. JONES, JR.

MR. OSCAR G. DAVIS

MR. J. L. CHIVINGTON, *President of Student Council*

MR. J. B. BOY, *Editor of Technique*

MR. T. FLETCHER SIMS, *Captain Football Team*

The athletic program for the 1938-39 session is in charge of the following staff:

COACHING STAFF

W. A. ALEXANDER, *Football*

R. L. DODD, *Football and Baseball*

MACK THARPE, *Football*

J. R. MCARTHUR, *Football, Basketball, Intramurals*

N. C. DEAN, *Freshman Football, Basketball, and Track*

R. M. MUNDORFF, *Basketball, Baseball, Intramurals*

G. C. GRIFFIN, *Track and Cross Country*

FLETCHER SIMS, *Freshman Football*

E. E. BORTELL, *Tennis*

H. E. DENNISON, Golf

R. T. MORENUS, *Fencing*

F. A. LANOUE, *Swimming*

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, storeroom 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

Architectural students are elected from the three upper classes. The Society was organized to promote the interests of the Department and to bring about a closer relationship between students and faculty. It has been active in publishing illustrated bulletins of student work, arranging for special lectures and exhibits, and holding meetings to discuss subjects of professional interest.

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 or plant visits which are meant to give the student a better idea of the function of the chemical engineer in modern industry.

Alpha Chi Sigma

Alpha Chi Sigma is a professional chemical fraternity founded with the idea of creating an interest in chemistry and at the same time recognizing achievement in that scientific branch. Its membership is drawn from students of chemistry and chemical engineering who intend to make some phase of chemistry their life work. At Georgia Tech this organization presents industrial moving pictures, lectures, keeps up a chemical display, etc., in an effort to encourage those who are interested in chemical engineering.

Electrical Engineering Society

This Society is a branch of the American Institute of Electrical Engineers.

Senior and Junior students in the Electrical Engineering Course are eligible for membership. Original papers are presented and articles from current electrical literature are abstracted and discussed. Lectures are given the Society by practicing engineers.

American Ceramic Society

The Student Branch functions under a charter of the national Society. Subscriptions to the Journal of the Society; addresses from practicing engineers, faculty and students; plant visitations; the presentation of industrial motion pictures; and the planning and execution of Student Branch special events all aid in background building and enlarging the perspective of the students, faculty, and local industry.

Phi Psi

Theta Chapter is the Georgia Tech local of a national textile fraternity, Phi Psi. Its membership is drawn from the Senior and Junior classes, with good scholastic standing as a prerequisite. The object of the organization is the promotion of scholarship and of interest in technical matters connected with the textile industry. From time to time motion pictures are sponsored, and men prominent in the textile field are invited to address the society.

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

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	7,300.00
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
Accumulated Interest	2,357.00

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.

ENDOWMENT FUND

From Julius L. Brown	$160,000.00
From Daniel Guggenheim	150,000.00
From Hon. Clark Howell and The Atlanta Constitution, WGST	150,000.00
From Josephine L. Cloudman	60,000.00
From Floyd W. McRae	500.00
From George W. Forrester	863.57
From William S. Rankin, Class of 1903	439.75
From Louis Wellhouse Memorial Fund	2,500.00

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 scholarship 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.

In order to encourage higher scholastic attainment among students of the profession, the local chapter annually presents the sophomore in electrical engineering who has the highest average, based on three terms, with an engraved log-log slide rule.

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 Enginering course.

A. I. Ch. E.

The Student Chapter of the American Institute of Chemical Engineers awards a badge and certificate to that junior in Chemical Engineering who has made the highest record on the work of the first two years—for co-operative students the first three years.

Pi Tau Sigma

Pi Tau Sigma, National Mechanical Engineering Fraternity, elects to membership outstanding mechanical engineering students in the Junior and Senior years.

Annual awards of two engineering handbooks are made to the highest ranking students in mechanical engineering as follows: One to a regular sophomore based on the work of three terms and one to a pre-junior (Co-op Plan) based on the work of four terms.

Skull and Key Scholarship Cup

The Skull and Key Society offers a scholarship cup to the sophomore in the Industrial Management Course who has made the highest average on the work of the first three terms.

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, 1937

GRADUATE DEGREES

Master of Science in Chemical Engineering

Nathan Sugarman

Leighton Delevan Yates

Master of Science in Aeronautical Engineering

Louis Benning Rumph, Jr. (1936)

Bachelor of Science in Mechanical Engineering

Harry David Emmert, Jr. (with honor)

Allen Harold Jensen (with honor)

Irving Lipton (with honor)

Joseph Hubert Powell (with honor)

Hugh Smith Barnes
William Lloyd Carver
Edward Earl Cheek
Clanton Boylan Collier
Marion Corbin Colson
Joseph Clement Crocker
Jack Glenn Croley
Frederick William DeMeritt
Jesse Franklin Goins, Jr.
Edwin Raymond Granberry
Edgar James Haley, Jr.
Edward Worthington Hawkins, Jr.
Frank Ellis Hodgdon
Alexander Currie Holt, Jr.
William Welch Horine
Roland Bennett Laws
James Earl Love
William McNenney
Arthur Albert Miller
Lee Roy Munroe, Jr.
Jacob Sherman Ramsey, Jr.
Cecil Rhyne, Jr.
Raymond Shepley
Charles Albert Sinquefield
Leo Judah Spencer
Charles Winston Stone, Jr.
George Crosland Taylor
Benjamin Pressley Walker III
Harry Nathan Weber
Henry Robert Weinstein
William Louis Willcox
John Hand Williams
Clarence Gale Kiplinger (1917)
George Alfred Harbour, Jr. (1936)
Nelson Robert Henry (1936)
Richard Furman Hudson, Jr. (1936)
Robert Hogue Hutcheson (1936)

Bachelor of Science in Electrical Engineering

Max Kunianski (with honor)
William Hardy Ratliff, Jr. (with honor)
William Edward Wallace (with honor)

Richard Fred Aldridge
Charles Turnage Anderson
Marion Howard Bradley
William James Delaney, Jr.
Sidney Brash Ehrlich
Paul Crandall Hutchison
Howard John Keefer
Frederick Delmar Kershaw
Julio Jorge Luis Lagomasino Lay
Sanford Bartow Neister
James Coogan Ryan
Charles Woodburn Smith
Ralph Taitz
Frank Jackson Williams
Francis Marion Bulloch (1936)
George John Jadronja (1936)

Bachelor of Science in Civil Engineering

Walter Frank Bosky (with honor)
John Baile Kackley (with honor)

Joel Chambless Beall
George Samuel Clark, Jr.
Albert Matthews Eldridge
Richard Skip Marshall
Paul Walton Purdom
Julian Howard Stollard
Samuel Stokes Tomlin, Jr.
Moultrie Alfred Warren
Samuel Richard Young
Charles Verner Clark, Jr. (1932)
William Lewis Dolive (1936)
James Patrick O'Donnell (1936)
William Carl Paulson (1936)
Harvey Anderson West (1936)

Bachelor of Science in Textile Engineering

John Augustus Blitchington
William Young Conn Dean
Jack Wilson Guest
George Harrison Hightower
Donald Chapman Johnston
William Lanier Rooney
Henry Woodruff Swift
Richard Augustus Verdier

Bachelor of Science in Chemistry

Ashworth Nathaniel Stull

Bachelor of Science in Chemical Engineering

John William Clegg (with honor)
Sidney Sam Kuniansky (with honor)

John Robinson Coley
Raymond Otto Conklin
Charles Porter Durham
Nathan Myron Frisch
William Albert Hardin, Jr.
Robert Daniel Johnston, Jr.
Norman Lester Klein
Henry William Ladynski
Buxton Lawn Layton
Sol Tobias Lipsius
Dan Robert Mains
Marvin Reynolds McClatchey, Jr.
John Avery Richardson
Harry Max Strauss
Jack Herschel Tribble
Samuel Malone Troutman
William Bataille vonFriedrich
Jacob Frank (1936)
Gordon Kenimer (1936)
Harry Clay Taylor (1936)

Bachelor of Science in Architecture

Manuel Raul Arias
William Seabrook Beckett
Pope Huguley Fuller
John Chastaigne Hulse
Sidney Kay Neill
Richard Valerion Richard
Ralph Ernest Slay
Charles Thames Molton (1935)

Bachelor of Science in Chemical Engineering
(Co-operative Plan)

Joseph Edwin Carter (with honor)
Claude Augustus Loflin, Jr. (with honor)

Lester Everett Caruthers
Russell Sylvester Fisher
Virgil Dean Gath

Bachelor of Science in Civil Engineering
(Co-operative Plan)

William Anthony Lindstrom (with honor)

Donnell Hulme Curry
Jack Victor Doriot
Albert Stephen Kovalefsky
Rafael Martin Mendez, Jr.
Herbert Walter Witte

Bachelor of Science in Electrical Engineering
(Co-operative Plan)

Jack Meyer Baker (with honor)
George Vickery Bussey (with honor)
Joseph Manuel Corral (with honor)
Louis Francis Hutchins (with honor)
William Rodgers Johnson (with honor)
James Addison Potter (with honor)

Herman Halbasch Blondet
Carolus Adams Brown
Wilfred Steven Brown
Kingsley Bernard Fisher
Tyrus Raymond Hartley
Joseph Arthur Heinrich
Robert Howard Hjelmfelt
William James Lalik
Chester Allerdice Maple
Paul Richard Schuh
Reginald Keith Templeton
Thomas Maxwell Wight

Bachelor of Science in Mechanical Engineering
(Co-operative Plan)

George Alexander Edmund Bevis (with honor)
William Curtis Norton (with honor)

Philip Heller Haney
Walter Dusenbury Harper
Ben Hirsch Keyserling
Wallace McWilliam Thompson

Bachelor of Science in Textile Engineering
(Co-operative Plan)

George Royal Bethune, Jr.
Ronald Earl Corbitt
John Franklin Guest
William Edgar Heron, Jr.
Robert Allan Hudson
Milton Victor Miltiades
Hugh Royce Mincey
Joseph Floyd Oliver

Bachelor of Science

James Robert Fitzpatrick (with honor)
David Daniel Long, Jr. (with honor)
John Curtis McKinnon, Jr. (with honor)
Marion DuBose Sims, Jr. (with honor)
Hugh Smith (with honor)
Carl Eiford Waits (with honor)

David Gordon Anderson
Richard Alexander Beard, Jr.
Hugh Willet Lester, Jr.
James Byington Lindsey

Bachelor of Science (continued)

Bert Stone Beasley
James Carrow Betty
Harry Burtz Boulware
Alvin Bingham Cates, Jr.
William Nathaniel Clyatt
John Stinson Cook
Norris Clarence Dean
Dawsie Luviger Echols, Jr.
James Middleton FitzSimons
Thomas Thorne Flagler, Jr.
Young Frank Freeman, Jr.
Louis Fuchs
Lawrence Coker Hays, Jr.
James Edward Johnson
William Everett Johnson
Herbert Jerome Kanter
Ralph Witherspoon Kestler
Gordon Ray Marshall, Jr.
Robert Millwood Matthews, Jr.
John Henry Mayes, Jr.
John Anastasius Mitchell
Gervis Grainger Morrison
Leland James O'Callaghan
James Guyton Parks, Jr.
Charles Beauprie Preston
Jerry Hampton Taylor, Jr.
Ernest Shaw Tharpe
Wade Cantrell Wells
Roy Farriba White
John Richardson Wilcox
Frank Stansell Little (1936)
William Samuel Martin (1936)
Edwin Augustus Peeples, Jr. (1936)
John William Pike (1936)

Bachelor of Science in Ceramic Engineering

Julian Edwin Watters (1936)

Bachelor of Science in Aeronautical Engineering

Robert Havard Fagan (with honor)

Robert George Boyd
George Wilson Burkett, Jr.
Robert Frederick Carter
William Goronwy Eager, Jr.
George Norman Eisenhart
Frank William Evans, Jr.
Robert William Kuettner
Robert Holmes McKown
Howard Krook Pike
Oswald Blant Porter, Jr.
Charles Harrington Ris, Jr.
Thomas Mason Sparks
Joseph Edward York

Bachelor of Science in General Engineering

Hugh Denton Gibson
Linton Watkins Pound

Bachelor of Science in Industrial Management

Robert Ollie Adams
John William Batts, Jr.
David Clark Boy, Jr.
James Stanley Moore III
Henry Lee Plage
Fred Bryan Ragland
James Blakely Ramage
Ralph David Reisman
S. Bradford Rymer, Jr.
Charles Read Simons

SCHOLASTIC HONORS AND PRIZES, 1937

Phi Kappa Phi Senior Cup—J. W. Clegg
Tau Beta Pi Senior Cup—W. E. Wallace.
Briarean Society Senior Cup—J. M. Corral.
Natl. Assoc. of Cotton Manufacturers, Medal—H. R. Mincey.
Cotton Manufacturers of Georgia, Medal—R. A. Hudson.
Alpha Chi Sigma, Award—P. D. Deans.
Kappa Eta Kappa, Award—C. S. Perry.
Pi Tau Sigma, Award—F. R. Short, D. H. DuPree.
Am. Inst. Chem. Eng'r., Award—F. T. Waltermire.
Am. Inst. Chem. Eng'r., Student Branch, Award—R. G. Davis.
Phi Eta Sigma Freshman Cup—R. C. Cheek.
Scientia Club Senior Cup—D. D. Long, Jr.
Fraternity Scholarship Cup—Beta Kappa.
Elected to Phi Kappa Phi: J. E. Carter, J. W. Clegg, J. M. Corral, H. D. Emmert, Jr., R. H. Fagan, R. A Hudson, A. H. Jensen, W. R. Johnson, J. B. Kackley, M. Kuniansky, S. S. Kuniansky, I. Lipton, D. D. Long, Jr., J. C. McKinnon, Jr., S. K. Neill, W. C. Norton, J. A. Potter, J. H. Powell, C. E. Waits, W. E. Wallace.

Elected to Tau Beta Pi: O. B. Andrews, C. M. Barnett, G. E. Bevis, G. C. Blanchard, J. B. Boy, R. E. Burks, G. V. Bussey, J. E. Carter, W. E. Chandler, J. W. Clegg, J. M. Corral, H. W. Criswell, T. J. Ebdon, H. D. Emmert, Jr., M. L. Goldman, M. A. Hudson, R. A. Hudson, F. L. Humphrey, J. F. Hutchinson, A. H. Jensen, R. D. Johnston, J. B. Kackley, M. Kuniansky, C. A. Loflin, R. P. McGowan, R. H. McKown, A. A. Miller, J. T. Mundy, W. C. Norton, E. L. Patton, Jr., J. B. Pendergrast, W. H. Ratliff, R. E. Rayle, D. C. Rimmer, J. C. Ryan, R. Shepley, R. A. Verdier, W. E. Wallace, T. M. Wight.

Winners of Gold "T" 1937: O. B. Andrews, C. M. Barnett, G. C. Blanchard, E. M. Bolze, R. E. Burks, W. E. Chandler, R. J. Daniel, R. G. Davis, P. D. Deans, M. L. Goldman, A. C. Hudson, M. A. Hudson, F. L. Humphrey, E. H. Mattingly, J. T. Mundy, A. W. Parrish, E. L. Patton, Jr., R. E. Rayle, W. F. Stokey, R. B. Wilhoit.

ACCREDITED HIGH SCHOOLS, GEORGIA LIST, 1937

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, II
Acworth, I
Adairsville, II
*Adel: Sparks-Adel, I
Adrian, I
Alamo: Wheeler Co., I
*Albany, I
Alma, I
Alpharetta, I
Alvaton, II
*Americus, I
  Anthony, I
Appling: Leah, II
*Arlington, I
Arnoldsville, II
*Ashburn, I
*Athens, I
Atlanta:
  *Boys H. S., I
  Com. H. S., I
  *Fulton H. S., I
  *Marist, Pr., I
  *N. Fulton, I
  Peacock S., Pr., II
  *Tech H. S., I
  *Univ. S., Pr., I
Attapulgus, II
Augusta:
  *Richmond Ac., I
Austell, II
Avera, II
Avondale, I

Baconton, II
*Bainbridge, I
  Mt. Pleasant, II
  Pine Hill, II
Baldwin, I
Barnesville:
  *Gordon In., I
Barney, II
Bartow, I
Barwick, I
Baxley, I
*Blackshear, I
Blairsville, I
Blakely, I
  Union H. S., II
*Blue Ridge, I
Bluffton, II
*Blythe, I
Bogart, II
Bonaire, II
Boston, I
Bostwick, II
Bowdon, II
Bowman, II
Braselton, I
Bremen, I
Bridgeboro, II
Brinson, II
Bronwood, I
†Brooklet, II
Broxton, II
*Brunswick:
  Glynn Ac., I
Buchanan, II
Buena Vista, I
*Buford, 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, I
*Cedartown, I
*Chamblee, I
Chatsworth, I
Chattanooga Valley, II
Chauncey, I
Chester, II
*Chickamauga, I
Chipley, I
Clarkston, II

†On Probation.

Clarksville, I
*Claxton, I
Clayton:
Rabun Co. H. S., I
Clermont: Chattahoochee Ac., Pr., I
Cleveland, II
Climax, II
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, I
Cusseta, II
*Cuthbert, I

Dacula, II
Dahlonega, II
Dallas, I
*Dalton, I
Dawnville, II
Damascus, II
Danburg, II
Danielsville:
Madison Co., I
Darien, II
†Davisboro, II
*Dawson, I
Dawsonville, II
Dearing, II
*Decatur, I
S. W. DeKalb, II
Demorest, II
Diffie:
W. Bainbridge, II
Dixie, I
Doerun, I
Donaldsonville, I
*Douglas, I
Douglasville, II
*Dublin, I
Duluth, II

*Eastonolle:
Stephens Co., I
Eastman, I
*East Point:
Russell H. S., I
*Eatonton, I
Edison, I
*Elberton, I
Centerville, II
Nancy Hart S., II
Ellaville, I
Ellijay: Gilmer Co., I
Elmodel, II
Emory Univ.:
*Druid Hills, I
Enigma, II
†Epworth Sem., Pr., II
Evans C. S., I

Faceville, II
Fairburn:
Campbell H. S., I
Fairmount, II
Fayetteville, I
*Fitzgerald, I
Flowery Branch, II
Folkston, I
Forsyth, I
*Fort Gaines, I
*Fort Valley, I
Franklin: Heard Co., II
Centralhatchee, II
Franklin Springs, II
Gabbettsville, 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
Mountain Hill, II
Hampton, I
Harlem, I
*Hartwell, I
*Hawkinsville, I
Hazlehurst, I
*Hepzibah, I
Hiawassee:
Towns Co., II
Hinesville:
Bradwell In., II

†On Probation.

Hilton C. S., II
Hiram, II
*Hogansville, I
Homer: Banks Co., II
Homerville, I

Ideal, II
Ila, I
Irwinton:
Wilkinson Co., II

*Jackson, I
Jakin, II
Jasper: Pickens Co., I
Jefferson: Martin In., I
Jeffersonville:
Twiggs Co., I
Jersey, II
*Jesup: Wayne Co., I
Jonesboro, II
Kibbe
Montgomery Co., II
Kingsland, II
Kite, II

LaFayette, I
*LaGrange, I
Rosemont, II
Lakeland, Lanier Co., I
Lakemont, 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, II
Lumber City, II
Lumpkin:
Stewart Co., I
Lyerly H. S., II
Lyons, I

Macon:
*Lanier, I
*Madison, I
*Manchester, I
Mansfield, I
*Marietta, I
Marlow, II
Marshallville, II
†Maxeys, II
Mayesville, I
McDonough, I
McRae-Helena, I
Workmore, II
Meigs, I
Menlo, II
*Metter, I
Midville, II
Milan, II
*Milledgeville:
Ga. Mil. Coll., I
*Millen, I
Milner, I
Molena, II
*Monroe, I
*Montezuma, I
*Monticello, I
Moreland, I
Morgan, II
Morganton, I
Morven, I
*Moultrie, I
*Mount Berry:
The Berry S., Pr., I
*Mount Vernon: Brewton-Parker In., Pr., I
Mt. Zion Sem., Pr., I
Mystic, II

†Nahunta, II
Nashville, I
Naylor, II
Nelson, II
Newington, II
*Newnan, I
Newton, II
Nicholls, II
Norcross, I
*Norman Park In., Pr., I

†Oak Park, II
Oakwood, II
Ochlochnee, I
Ocilla, 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

*Quitman, I

Rabun Gap:
Rabun-Gap-Nac., I
Ray City, II
Rebecca, II
†Register, II
Reidsville, II

†On Probation.

Reynolds, I
Rhine, II
*Richland, I
Ringgold, II
Roberta, I
Rochelle, I
Rockmart, I
Rockingham, II
Rocky Ford, II
*Rome, I
*Darlington Ac., Pr., I
Model School, I
Roopville, II
Rossville, I
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, I
Stapleton, II
Statenville, II
*Statesboro, I
Statham, II
Stilmore, I
†Stilson, II
Stone Mountain, I
Summertown, II
*Summerville, I
Summit:
Emanuel Co., I
Sumner, II
Surrency, II
*Swainsboro, I
Sycamore, II
*Sylvania, I
Sylvester, I

Talbotton, II
Tallapoosa, I
*Tallulah Falls, I
*Tate, I
Temple, II
*Tennille, I
*Thomasville, I
*Thomson, I
Thomaston:
*R. E. Lee In., I
*Tifton, I
Tignall, I
Toccoa Falls In., II
*Toccoa, I
Toomsboro, II
Trenton: Dade Co., I
Trion, I
Tucker, II
Turin: Starr, II
Ty Ty, II

Unadilla, II
Union Point, I
*Valdosta, I
*Vidalia, I
Vidette, I
Vienna, I
Dooly Co. H. S., II
Villa Rica, I

Wadley, I
Waleska:
Reinhardt Ac., Pr., II
Walker Park:
Voc. and Tr. S., I
Waresboro, II
*Warrenton, I
Warwick, I
*Washington, I
Watkinsville, I
Waverly Hall, II
*Waycross, I
Wacona, II
*Waynesboro, I
Ways C. S., II
*West Point, I
Whigham, II
Willacoochee, II
*Winder, I
Winterville, I
Woodbine, I
Woodbury:
*Meriwether Co., I
Woodcliff:
Bay Branch H. S., II
Woodland, I
*Wrens, I
Wrightsville, I
Yatesville, II
*Young Harris, Ac., Pr., I
*Zebulon, I

†On Probation.

REGISTER OF STUDENTS—1937-38

ABBREVIATIONS: A—Architecture; AE—Aeronautical Engineering; Ch—Chemistry; ChE—Chemical Engineering; Cer—Ceramics; CE—Civil Engineering; Co—Co-ops in Engineering; E—Electrical Engineering; En—Engineering unclassified; G—Graduate students; GE—General Engineering; IM—Industrial Management; M—Mechanical Engineering; S—General Science; T—Textile Engineering; sA—Special Architecture; sT—Special Textile Engineering. The numeral preceding the abbreviation indicates the class year of the student.

Students whose names are printed in *Italic type* and starred, rank in the highest ten per cent and constitute the *honor rolls* of their respective classes.

Abbey, Ted Harris	1	IM	Atlanta
Abislaiman, Albert Laura	2	E	Havana, Cuba
Abraham, Naseem Nicholas	2	CoE	Macon
Abrams, John Clinton	4	CoE	Savannah
Acree, Travis Hough	4	IM	Calhoun
Adair, George DeLane	1	A	Nashville, Tenn.
Adams, Herman Hoyal	4	IM	Chattanooga, Tenn.
Adams, Harold Winston	4	CoE	Atlanta
Adams, Leland Carroll	1	Co	Clearwater, Fla.
Adams, Robert Eugene	1	EN	Atlanta
Adams, Robert Lee	4	CoE	LaGrange
Adams, Samuel Fred	1	Co	Atlanta
Adams, Samuel John	1	En	Columbus
Adcock, Alvin Neal, Jr.	1	En	Fender
Addison, Stephen Oliver	3	CoT	Rossville
Addison, William Porter, Jr.	3	CoT	Rossville
Addy, James Bowden	3	A	Decatur
Aderhold, Robert	1	IM	East Point
Aebersold, Robert Charles	2	ChE	Atlanta
Ahern, Lawrence Richard	4	ChE	Bridgeport, Conn.
Aitcheson, Frank Louis	2	CE	Atlanta
Albert, Joseph	2	Cer	Metter
Albury, Woodrow Wilson	2	CoE	New Smyrna, Fla.
Aldrich, Clare Aaron	3	CoM	Oglethorpe University
Aldridge, Robert Preston	4	IM	Tallahassee, Fla.
Alexander, Edwin Crawford, Jr.	1	En	Elizabethton, Tenn.
Alexander, Edgar Kinkead	3	Cer	Atlanta
Alexander, Fred Littleton	3	E	Malden, Mo.
Alexander, George Potter	1	En	Atlanta
Alexander, James Aleck	3	E	Atlanta

Alexander, Richard Carlisle	2	Cer	Atlanta
Alexander, William Jackson	4	IM	Atlanta
Alford, Donald	2	A	Graham, Texas
Alfriend, William Jeffery, Jr.	3	ChE	Tallahassee, Fla.
Algeo, Robert Franklin	2	ChE	Henrietta, Okla.
Allcorn, Frank Walter III	1	En	Atlanta
Allen, Dale Treadwell	1	En	Decatur
Allen, Eric Chesley, Jr.	1	En	Ashland, Ala.
Allen, Frank Atlee	1	Co	Atlanta
Allen, George Jackson	2	ChE	Savannah
Allen, Robert Lewis		G	Atlanta
Allen, Thomas Richard	4	IM	Atlanta
Allio, John Peter	2	CE	Corona, N. Y.
Almand, Paul Edward	2	IM	Macon
Almond, Hooper Veal, Jr.	4	IM	Atlanta
Alsobrook, Benjamin Russ	4	CoM	Tallahassee, Fla.
Altobellis, Julian Arthur	1	A	Atlanta
Ameen, Alfred	3	E	Winnsboro, S. C.
Amos, William Manry	4	E	Edison
Anderson, Arnold McCord	2	CoCE	Lewisburg, Tenn.
Anderson, Crawford Sharpe, Jr.	1	En	Atlanta
Anderson, John Englebert, Jr.	2	E	Tampa, Fla.
Anderson, Lester Fauver, Jr.	3	IM	Mt. Hope, W. Va.
Anderson, Richard Clement	2	M	Atlanta
Anderson, Robert Emmet	3	CE	Atlanta
Andrews, Otho Bruce	4	T	Atlanta
Appleby, Harry Hughes	4	IM	Nashville, Tenn.
Archer, Derrek Stuart	1	En	Rome
Arden, Milton, Jr.	1	Co	Guyton
Armstrong, James Hal	1	Co	Atlanta
Armstrong, Ralph Albert	1	Co	Atlanta
Armstrong, Thompson Wallace	1	En	Macon
Arnold, Robert Earl	3	CoE	Norwood
Arnold, Roy Madison	1	En	Norwood
Ashbaugh, Bernard David	2	GE	Clarkton, Mo.
Ashbrook, Charles Stokley	1	En	Brooksville, Fla.
Ashby, William Bacon	2	M	Havana, Cuba
Ateshoglou, Anastasis Demetre	G	CE	Istanbul, Turkey
Atkins, James Walter	4	E	Savannah
Attanas, John George	1	Co	Ulster Park, N. Y.
Atwood, Paul Eugene	4	CoChE	Waycross
Auclair, Charles Alphonse	4	CE	Atlanta
Averett, Jack Monroe	1	En	Columbus
Averill, Joseph Milton	2	ChE	Ft. Lauderdale, Fla.
Ayres, Noble Brawnson	1	En	Mableton

Bachler, Dudley Francis	2	A	Atlanta
Baeder, David Munroe	4	M	Nutley, N. J.
Baggarly, Olin Joseph	1	En	Atlanta
Bagley, Henry Clay	2	GE	Greenwich, Conn.
Bagley, Seaborn Edgar, Jr.	4	T	Alpharetta
Bagwell, Jesse Clinton, Jr.	1	En	Atlanta
Bailey, Bruce Shaw	1	En	Houston, Texas
Bailey, Herman	3	IM	Atlanta
Bailey, John Harris	4	E	Elberton
Bailey, Ray Eugene	2	CoT	Hixson, Tenn.
Bailey, Robert Orville	2	ChE	Pharr, Texas
Baker, Charles Francis	3	E	Savannah
Baker, Harold Russell	3	E	Plainville, Conn.
Baker, John Dixon	1	En	Atlanta
Baker, John Major	2	CE	Hartwell
Baker, Robert Randolph	1	Co	Griffin
Baker, William Otis	4	IM	Atlanta
Ballantyne, Robert Douglas	4	M	Atlanta
Ballard, Wiley Perry	1	En	Charlotte, N. C.
Ballas, Parascho Pete	2	IM	Decatur, Ala.
Ballengee, Carl Benton	1	Co	Huntington, W. Va.
Ballenger, Robert Daniel	4	GE	Canon
Ballenger, William Harold	1	En	Atlanta
Ballirano, Joseph Luck	2	M	Brooklyn, N. Y.
Baltzer, Charles Lee	1	En	Covington, Tenn.
Bandy, Elmer Griffin	2	CoE	Sanford, Fla.
Bandy, Hunter Scott	4	CoChE	Washington, D. C.
Baran, Victor Joseph Roman	1	Co	Stanford, Conn.
Barber, James Corbett	5	CoChE	Waycross
Barge, Otis Alvin, Jr.	1	A	Atlanta
Barkovitz, Abraham Baruch	3	ChE	Hayti, Mo.
Barnard, Alfred	4	Ch	Asheville, N. C.
Barnes, Tommy Williams	4	IM	Atlanta
Barnett, Irvin	4	CoT	Atlanta
Barnhart, John Morrell	1	En	Pleasantville, N. Y.
Barnhill, James Ed, Jr.	5	CoT	Folkston
Barnwell, John Gibbes	1	En	Atlanta
Barr, George Daniel, Jr.	1	CoChE	Atlanta
Barrett, Sidney Joseph	4	T	Atlanta
Bartha, Steve	2	ME	Sea Cliff, N. Y.
Bartlett, Joseph Straley	1	IM	Asheville, N. C.
Basmajian, Edward	3	CoT	Atlanta
Bass, John Frank	2	Cer	Brookhaven
Batchelor, Emory Nix	1	IM	Atlanta
Bates, Charles Holt, Jr.	2	CoE	Nashville, Tenn.

Batson, John Harry	2	CoCE	Lumberton, Miss.
Bayer, Joseph Thomas, Jr.	2	E	Nashville, Tenn.
Bayes, Carlos Woodford	1	Co	South Point, Ohio
Bayliss, Alfred Wettermark	2	M	Atlanta
Bazan, Charles Louis	1	En	Utica, N. Y.
Beall, Harold Grafton	3	M	Chamblee
Beall, Ralph DeLoach	3	CE	Brooklyn, N. Y.
Beals, John Clarence	1	En	St. Augustine, Fla.
Beals, John Thomas	1	IM	Greenville, Miss.
Bean, Charles Lester	4	E	Atlanta
Beard, William Roane	2	IM	Atlanta
Beardsley, Melville Whitnel		G-M	Atlanta
Beaty, Alden Query	4	M	Charlotte, N. C.
Beaudrot, Charles Leland	3	M	Greenwood, S. C.
Beaumariage, George Nestor, Jr.	1	Co	Bridgeville, Pa.
Beaumont, Walter Albert	1	En	Atlanta
Beck, Harry William	4	M	Kirkwood, Mo.
Beck, William Elmo	1	Co	Savannah
Beckett, John Tomlinson	1	Co	Johns Island, S. C.
Beckwith, Philip Warren	2	M	Savannah
Bedell, John Gilchrist	2	CE	New Orleans, La.
Bedinger, Walton Everett	1	En	Savannah
Beers, Robert Earl	2	IM	Newnan
Beers, William Howard, Jr.	3	M	Gatun, Canal Zone
Beeson, Henry DeWitt	1	En	Winston-Salem, N. C.
Behen, John Plank	1	En	Cloverport, Ky.
Behm, Raymond Gaston	3	IM	Decatur
Belcher, Charles Luther, Jr.	3	CE	Atlanta
Bell, Oliver McNair	4	IM	Arlington
Bell, Warren Burke	2	E	Hephzibah
Beller, William Sterne	1	En	Brooklyn, N. Y.
Bennet, William Baker	1	Co	Cordele
Bennett, William Francis	2	M	Dothan, Ala.
Benson, Robert Wayne	1	En	Atlanta
Benton, Edward Joy, Jr.	4	IM	Savannah
Benton, Lawrence Raymond	1	Co	Atlanta
Benton, William Addison	1	Co	Jacksonville, Fla.
Berdahl, Carroll Martin	1	En	Sioux Falls, S. D.
Bergstrom, Andrew Russell	1	En	Atlanta
Berry, Charles Clymer	1	En	Memphis, Tenn.
Berry, Charles Kinsel	1	En	Columbus
Berry, David Randolph	1	En	Rome
Berry, Maynard Lee	2	GE	Atlanta
Berry, Ralph Marion	3	ChE	Atlanta
Berry, Thomas Jake	3	IM	Griffin

Bestor, George Clinton	3	IM	Clewiston, Fla.
Bethune, Manning Kirk	3	CoM	Macon
Beutell, Joe Marion, Jr.	2	M	Thomasville
Bevins, Karl Alten	4	CoE	Atlanta
Bickerstaff, Charles Augustus, Jr.	4	IM	Atlanta
Bigger, Ralph Harvey	3	CoCE	Marceline, Mo.
Biggerstaff, Edward Daniel, Jr.	3	CoM	Memphis, Tenn.
Billias, Mike George	1	Co	Daytona Beach, Fla.
Billups, James Otis	3	GE	Norfolk, Va.
Binion, Lamar Edgar	3	AE	Atlanta
Binns, Milton Robert	3	E	Greensboro
Bird, John Dexter	1	En	Metter
Birdsall, John Wilbur	2	CE	Decatur
Birdsall, Paul Everett	1	En	Decatur
Birnn, Richard Roland	1	En	Maxwell Field, Ala.
Bishop, John Robinson	3	M	Atlanta
Black, Farish Cleveland	1	En	Atlanta
Black, Henry Simon	2	CoM	Americus
Blanchard, George Carswell, Jr.	4	Ch	Augusta
Blanks, Louis Roberts	5	CoChE	Macon
Blick, John S.		Sp	Atlanta
Bliss, William Coghill	3	M	Fairfield, Ala.
Bloodworth, Robert Howard	4	ChE	Atlanta
Blumberg, Marvin William	2	T	Atlanta
Blume, Kenneth Bernice	4	CoChE	Atlanta
Boarman, George Macatee	1	En	Springfield, Pa.
Boatwright, Joseph Haire	3	ChE	Atlanta
Bobbitt, Russell Edwin	2	IM	Atlanta
Bodenheimer, Louis Charles	1	En	Atlanta
Body, Joseph Merritt	4	A	Atlanta
Bogle, Frank		G	Atlanta
Bohannon, Charles P.	2	CoM	Moreland
Bohannon, Jack Hal	2	CoE	Atlanta
Bohannon, Sam Bailey	2	CoM	Atlanta
Boling, Harry Steel	2	IM	Atlanta
Bolton, William Maddox	2	T	Griffin
Bolze, Ernest Marshall	5	CoE	Houston, Texas
Bond, George Wilson	1	En	Atlanta
Bonn, Robert Hallowell	2	A	Baltimore, Md.
Booker, Melzar Pegram	2	IM	Greenville, S. C.
Booth, Richard Alfred	2	Co	Holyoke, Mass.
Boote, Robert Oscar	3	ChE	Jacksonville, Fla.
Bordenca, Carl		G-Ch	Birmingham, Ala.
Borges, Max, Jr.	3	A	Havana, Cuba
Borrell, Anthony Joseph	2	E	Tampa, Fla.

Boswell, Warren Calvin	2	M	Columbus
Both, Harold	2	CoM	Brooklyn, N. Y.
Bowden, Hugh Woodruff	4	IM	Atlanta
Bowen, Dan John, Jr.	2	A	Atlanta
Bowen, William Clinton	1	En	Birdsboro, Pa.
Bower, Harry Carlyle	3	ChE	Shelman
Bower, Leibert Winfield	1	En	Camden, Ark.
Bowles, Paul James	1	En	Petersburg, Va.
Bowman, James Henry	1	En	Decatur
Bowser, David Glimes	5	CoChE	Pittsburgh, Pa.
Boy, John Buckner	4	M	Huntington, W. Va.
Boyd, Robert Wesley	3	M	Savannah
Boyer, Floyd James	2	CoE	Billings, Mont.
Bozeman, John Woodrow	1	En	Cristobal, Canal Zone
Bradley, Joe Alexander	1	En	Buford
Bradshaw, Jesse Austin	3	T	Atlanta
*Bragg, Davis Alexander, Jr.	4	CoChE	Rome
Branan, Charles Bartow	1	En	New Smyrna Beach, Fla.
Branch, John	2	ChE	Sale City
Brandon, Royce Lee	3	IM	Atlanta
*Brannen, Francis Mather	2	CoChE	Savannah
Brannen, Lester Eli	2	Cer	Statesboro
Brannen, Cullen Albert	2	M	Albany
Brannon, Raymond	1	Co	Memphis, Tenn.
Brasfield, Joseph Dunckley	4	M	Natchez, Miss.
Braswell, Thomas Edward	2	M	Redan
Bray, Cecil Baxter, Jr.	2	CE	Woodbury
Bray, Robert Wells	1	En	Cheshire, Conn.
Bretz, John Arden	3	ChE	College Park
*Bretz, Richard Harris	2	ChE	College Park
Bricker, Ethelbert Irvine		G-AE	Atlanta
Bridges, Howard Leon, Jr.	1	En	Atlanta
Bridges, Robert Billy	1	En	Anniston, Ala.
Brinson, Robert Schley	1	Co	Columbus
Brinson, Thomas Fred	4	CoM	Columbus
*Brisendine, Ned Howell	3	IM	Atlanta
Brock, John Allen	4	S	College Park
Bronson, Horace Williams, Jr.	3	CoChE	Macon
Brooker, Curtis Irvine	2	Cer	Tampa, Fla.
Brooks, Eugene Estes	2	M	Atlanta
Brooks, Grady William	1	En	Atlanta
Brooks, James Leon, Jr.	3	CE	Atlanta
Brooks, Thomas Price	2	IM	Macon
Broward, Hoyt Edward	3	CoM	Jacksonville, Fla.
Brown, Arthur Melvin	4	CoE	Swannonoa, N. C.

Brown, Byron Bosworth	2	E	Miami, Fla.
Brown, Charles Douglas	1	Co	Kingston
Brown, Clinton Sommer, Jr.	1	Co	Roanoke, Va.
Brown, Edward Augustine	2	ChE	Asheville, N. C.
Brown, Herbert Stanton, Jr.	4	AE	Martin
Brown, Keith Stanley	3	CoChE	Pucatello, Idaho
Brown, Lucius Lamar	1	En	Atlanta
Brown, Robert Earl	4	IM	Atlanta
Brown, William Bruce	1	En	Atlanta
Browning, Arthur Wolfe	3	CE	Cochran
Bruer, James Elbert	2	CoE	Nashville, Tenn.
*Brunson, James Edwin	5	CoE	Greenville, S. C.
*Brusch, Richard Gervais	3	IM	Hammond, Ind.
Bryan, James Erwin	4	T	Kathleen
Bryan, Morris Marion	1	En	Jefferson
Bryson, Harry Sommers	2	CoE	Rome
Bryson, Rhett Bennett	1	En	Dothan, Ala.
Buchanan, Edward Storey	2	M	Newnan
Buchanan, Frank Malone	1	En	Miami Beach, Fla.
Buechler, William Elmer, Jr.	1	En	Decatur
*Bulbin, Frederick Lewis	1	Co	Miami, Fla.
*Bull, Irving Stuart, Jr.	3	E	Winston-Salem, N. C.
Bull, Richard	3	AE	Atlanta
Bullock, Richard Gould	2	CoM	West Birmingham, Ala.
Bunn, Giles Featherston, Jr.	2	E	Montezuma
Bunnell, Elmer Ray	1	En	Decatur
Burdett, Virlyn Revis	1	IM	Burdal
Burger, Matthew James	3	E	Glassport, Pa.
Burgess, Homer Wilson	s	CoE	St. Albans, W. Va.
Burgess, Jack	2	GE	Atlanta
Burgess, Samuel Lamkin	1	Co	Ashburn
Burke, Thomas Edwin	2	M	Rocky Ford
Burkhalter, George Bradley	2	E	Rome
Burks, Robert Elbert, Jr.	4	Ch	Birmingham, Ala.
Burks, William S., Jr.		G-CE	Birmingham, Ala.
Burnes, Hugh Sydnor	2	T	Rome
*Burnet, Robin Grier	2	GE	Athens
*Burnett, Edwin Moore	2	E	Ft. Oglethorpe
Burns, Dana Bruce, Jr.	4	CE	Asheville, N. C.
Burns, Harold Glen	1	Co	Magnolia, Ark.
Burns, James Derry	2	Cer	Macon
Burpo, Howard L., Jr.	1	En	Jenkins, Ky.
Burr, Richard K.	2	ChE	Davenport, Iowa
Burroughs, Charles Eugene	1	IM	Brandsville, Mo.
Burroughs, Mac Hazlehurst	3	IM	Brunswick

Burt, Frank McAllister	2	CoM	N. Birmingham, Ala.
Burton, Richard	1	En	Atlanta
Burton, William Johnston	1	En	Chattanooga, Tenn.
Busbee, Floyd Edward	3	T	Macon
*Busbee, Greer Albert, Jr.	1	En	No. Birmingham, Ala.
Butler, Candler Wilson, Jr.	1	IM	Atlanta
Butler, Walter Seward, Jr.	4	S	Utica, N. Y.
Butner, Whitley Herron	4	IM	Atlanta
Butts, David Thomas, Jr.	2	Cer	Milledgeville
Byerley, Thomas Evans	1	Co	Atlanta
Byers, Robert Harding	3	ChE	Decatur
Bynum, Henry William	3	IM	Americus
Bynum, Patrick Ross	2	GE	Americus
Byrd, Cohen Buster	1	En	Stillmore
Byrd, Joseph Pitts III	4	GE	Tulsa, Okla.
Cadle, William Edward	1	En	Smyrna
Cahill, James David	1	En	Albany
Cain, John Hardison	3	CoCE	Savannah
Caldwell, James William	4	ChE	Atlanta
Calhoun, Charles Hyman, Jr.	4	IM	Washington
Calhoun, George Milton	1	Co	Atlanta
Callaway, Tucker Noyes	2	E	Atlanta
Calley, William Laws	4	CE	Atlanta
Calloway, Kerby Earl	4	GE	Tallulah Falls
Cameron, Byron Riggs	2	M	Cranford, N. J.
Camp, Rufus Eldridge	3	Cer	Atlanta
Camp, Robert Fell	3	M	St. Petersburg, Fla.
Camp, Robert Fred	1	En	Austell
Campbell, Herman Bailey	4	M	Pittsburgh, Pa.
Campbell, Ira Eugene	1	IM	Atlanta
Campbell, John Owen	1	En	Atlanta
Campbell, Milton Orson	4	IM	Atlanta
Campbell, Stephen Campbell	1	En	Atlanta
Campbell, Vance Dodson	3	M	Rockmart
Campbell, William Cooper, Jr.	4	E	Columbus
Campen, Marvin Thomas	3	CoChE	Atlanta
Cann, James Ferris, Jr.	2	ChE	Savannah
Cantu, Louis Santos	2	E	Monterrey, N. L. Mexico
Capouya, Albert Isaac	1	En	Atlanta
Cargile, Archie MacDonald	1	Co	St. Augustine, Fla.
Carl, Robert Arthur	2	M	Springfield, Mo.
Carlson, Raymond Axel	1	Co	Chicago, Ill.
Carmack, John Edgar	4	T	Decatur
Carmical, Abe Young	2	T	Newnan

Carmichael, Ben Willingham	1	En	Atlanta
Carmichael, Robert Lyons	1	Co	Jackson
Carmichael, Warren Candler	1	En	East Point
Carnes, Charles William	2	ChE	Eastman
Carpenter, James Hall	2	Cer	Syracuse, N. Y.
Carpenter, Robert Edwin	3	CoM	Atlanta
Carr, Lucius Leonard	2	Ch	Bright Waters, N. Y.
Carran, John Alfred	4	AE	Atlanta
Carroll, James Campbell	1	Co	Dublin
Carson, James William	1	En	Rutherfordton, N. C.
Carson, Samuel John	3	IM	Youngstown, Ohio
Carter, Edgar Vernon	1	En	Atlanta
Carter, William Joseph III	2	M	Washington, D. C
*Cary, Norman Miller	2	M	Alexandria, Va.
Case, Erle Glenn, Jr.	1	En	Savannah
Cash, William Elbert	1	IM	Atlanta
Cason, Mac Alfred	3	A	Atlanta
Cassell, James Robert	1	Co	Baltimore, Md.
*Castellaw, James Allen	5	CoCE	Locust Grove
Castles, Walter, Jr.		G-AE	Short Hills, N. J.
Catasus, Felipe Pazos	1	En	Habana, Cuba
*Cauble, Gordon B.	3	CoM	Atlanta
*Caulfield, Thomas Boatner	4	E	Atlanta
Cavenaugh, David Eli	3	CoE	Atlanta
Cavette, Neil Mott	1	IM	Memphis, Tenn.
Centorbi, Joseph Kenneth	3	M	Brooklyn, N. Y.
*Chalenski, Arthur Abdon	1	Co	Jersey City, N. J.
Chamberlain, Raymond Edsel, Jr.	4	AE	Chillicothe, Ohio
Chan, Robert Earl	4	CoChE	Savannah
Chance, Jack Norwood	1	En	Atlanta
*Chandler, Wilmer Everett	5	CoM	Huntland, Tenn.
Chapman, Aurelius Franklin		G-Ch	Marietta
Chapman, Donald John	1	Co	Clifton, N. J.
*Chapman, Ernest Wilbur	2	E	Conyers
Chapman, Joe LeRoy	1	IM	Dallas, Texas
Cheatwood, John Daniel	2	CE	Atlanta
Cheek, Hugh	1	IM	Gainesville
Cheek, John Sewell	2	E	Gainesville
*Cheek, Robert Chase	2	CoE	Savannah
Cheney, John William	3	E	Macon
*Cherry, John Wesley	2	A	Atlanta
Chesser, Griffin Ardell	1	En	Rome
*Cheverton, Hendrick, Jr.	3	ChE	Rich Hill, Mo.
Childs, John Robert, Jr.	3	E	Atlanta
Childs, William Alexander	3	ChE	Huntington, W. Va.

Chivington, John Logan	4	T	Chattanooga, Tenn.
Choquette, Roy Francis	1	Co	Chicago, Ill.
Christian, Arthur Howard	1	Co	Columbus
Christian, Thomas Richard	3	CoE	Columbus
Christopher, Moses Guyton	2	GE	Decatur
Chunn, James Claude	2	E	Rossville
Chupp, Eugene Dyer	1	A	Sparta
Churchman, Henry Nelson	3	CoM	Louisville, Ky.
Clapp, Edwin Marcus, Jr.	1	Co	Byron
Clapp, Tim	1	En	Atlanta
Clare, Enrique Joffe	1	En	San Jose, Costa Rica
Clark, Emory Wilcox	3	Cer	Jacksonville
Clark, Fred Whiting	4	E	Atlanta
Clark, James Allan	3	A	Atlanta
Clark, Jack Campbell	4	AE	Atlanta
Clark, John Leonard	1	En	Wilmington, Del.
Clark, John Williamson	1	En	Waynesboro, Va.
Clark, Marion Raymond	3	M	Garden City, N. Y.
Clark, Richard Douglas	5	CoChE	Dawson
Clark, William Howard	2	ChE	Springfield, Mo.
Clarke, Robert LaGrone	4	Ch	Atlanta
Clarson, Reuben Ewald, Jr.	2	CE	St. Petersburg, Fla.
Claussen, Henry Herman	1	En	Augusta
Clay, Jim Price	2	IM	Atlanta
Clearman, William Thomas	3	CoT	Blakely
Cleary, Lawrence Douglas	1	Co	Nutley, N. J.
Cleckley, John Treutlen	2	CoE	Augusta
Cleveland, James Russell	1	En	Atlanta
Cleverdon, Leroy Childress	2	E	Marion, Ala.
Cliett, Robert Lee	1	En	Atlanta
Clift, Jack Thomas	1	En	Atlanta
Clinkscales, Robert Stewart	3	E	Atlanta
Clodfelter, Thomas Clarence	1	En	Eatonton
Clontz, Robert Joe	2	CoE	Asheville, N. C.
Coalson, Embry Lumpkin	2	M	Rome
Cobb, Columbus Asbury	1	Co	Cedartown
Cobb, Howell Edward	3	A	Athens
Cochran, Don Douglas, Jr.	2	CoCE	Clearwater, Fla.
Cochran, Robert Puette, Jr.	1	Co	Newton, N. C.
Cochran, William Jackson	1	En	Stonewall
Coe, Colburn	3	M	Augusta
Coe, William Grant	1	Co	Orlando, Fla.
Cohen, Herman	2	M	Brooklyn, N. Y.
Cohn, Richard Gerald	2	CoChE	Savannah
Coit, Burton Carnot	1	En	Washington, Pa.

Cole, Bruce Albert	4	M	Mountain City, Tenn.
Cole, Ben Gaston	3	CoChE	Candler, N. C.
Cole, Madison Filmore	1	En	Macon
Coleman, Edward Clarke, Jr.	3	E	Coffeeville, Miss.
Coleman, James Edgar	2	E	Ft. Gaines
Coleman, Thad Thornton	2	CE	Eastman
Coley, John Robinson		G-ChE	Westport, Conn.
Collier, Henry Latimer	1	IM	Atlanta
Collier, Jena Cuthbert II		Sp	New York, N. Y.
Collins, Edward Russell	4	IM	East Point
Collins, James Estes	1	En	Fairburn
Collins, John Morgan	2	CoE	Savannah
Colvard, Howard Hamilton	2	M	Winder
Colvin, Walker Owens	2	IM	Lincolnton
Combs, Gordon	3	CoM	Donelson, Tenn.
Comey, David Parker	1	En	Danvers, Mass.
Commins, Louis Shelly	1	IM	Atlanta
Condon, Jack George	2	CoE	Freeport, L. I., N. Y.
Conley, Walter Robertson	2	CoChE	Alamo, Tenn.
Conner, Eldred Allen	1	Co	Bartow, Fla.
Connors, Joseph Ellis	1	Co	Chattanooga, Tenn.
Conway, Hobart McKinley	2	GE	Atlanta
Cook, Earl Pope	1	En	Gabbettville
Cook, Edward Smith, Jr.	1	Co	Atlanta
Cook, Homer Vernon	4	T	Porterdale
Cook, Jack Fulton	1	IM	Atlanta
Cook, William Joseph	3	M	Valdosta
Cooley, Hugh Thompson	2	M	Lawrenceville
Cooley, James Glass	1	A	Lawrenceville
Cooper, Albert Henry	2	CoT	Columbus
Cooper, James Arthur	3	E	Emory University
Cooper, James Victor	4	IM	Atlanta
Cooper, Marvin Watson	2	CoM	Hamilton
Cooper, Robert Archer	1	En	San Juan, Porto Rico
Coppock, Johnstone Lewis	1	En	Columbus
Corbitt, James Allen	1	En	Brunswick
Cork, John Arthur, Jr.	3	T	Bartow, Fla.
Cornell, Robert Leslie, Jr.	3	M	Sanford, Fla.
Corr, James Elmo	3	ChE	Augusta
Corry, Billy Adair	2	T	Barnesville
Cortes, Manuel Margarito	4	CE	Parral, Chihuahua, Mexico
Cosby, John Thomson	3	M	Abingdon, Va.
Cosgrove, Paul Francis, Jr.	3	IM	Atlanta
Cosper, William Roy, Jr.	2	M	Atlanta
Cothran, James Robeson	1	En	Atlanta

Cotten, Wallace Atkinson	4	E	McComb, Miss.
Cotten, William Warren	2	ChE	Atlanta
Cottingham, Paul Franklin	2	CoM	Greenville, S. C.
Couch, Andrew George	1	Co	East Point
Couch, Harold Kennan	1	Co	Magnolia, Ark.
Coursen, Lewis Vincent	1	En	Pompton Plains, N. J.
Courtney, Chester Carroll	2	CoM	Jacksonville, Fla.
Courtney, John George, Jr.	4	IM	Atlanta
Cover, Charles Lee, Jr.	4	ChE	Albany
Cowart, Frank P.	2	CoE	Atlanta
Cowles, Albon Chase	1	En	Atlanta
Cox, William Boswell	1	En	Miami, Fla.
Cox, William Skidmore III	2	ChE	Atlanta
Coyle, William George, Jr.	3	M	Atlanta
Craig, James Edward	3	T	Atlanta
Crane, Hubert Hammond, Jr.	1	A	Ft. Worth, Texas
Crankshaw, Lawrence	1	IM	Atlanta
Crawford, Gilbert Kent	1	En	St. Augustine, Fla.
Creamer, Richard Louis	4	CE	Amityville, N. Y.
Creighton, Frank Milton	1	IM	Americus
Criswell, Harvey Wilburn, Jr.	4	M	Atlanta
Crocker, Burton Blair	2	CoChE	Atlanta
Crocker, Douglas Schocke	4	M	Brooklyn, N. Y.
Crockett, Argyle Campbell, Jr.	5	CoCE	Bradenton, Fla.
Crockett, Lewis David	3	E	Nashville, Tenn.
Cromer, William Collier	2	IM	Atlanta
Crosby, Caleb Pickens	2	E	Atlanta
Cross, George Lee	3	ChE	Concord, N. C.
Crossfield, Robert Hanson	2	M	Griffin
Crosswell, Horace Alfred	1	En	Atlanta
Crowder, George Anthony	2	CoCE	Tampa, Fla.
Crowe, Dewey Edward	1	Co	Johnson City, Tenn.
Crumbley, Cecil Franklin	4	CoM	Atlanta
Crumley, Robert Morris	2	IM	Atlanta
Crumly, Harold Jesse	4	CoE	Ensley, Ala.
Cudlipp, Charles LaForrester	1	En	Atlanta
Culp, Leland J.	4	M	Warrensburg, Mo.
Culpepper, Richard Lee	2	CoM	Savannah
Cummings, Thomas Eugene	1	En	Joplin, Mo.
Cunningham, Paul Dobbins	2	A	Atlanta
Cunningham, William George, Jr.	2	Cer	Atlanta
Curley, James Barron	2	T	West Point
Curry, John William	3	AE	Coral Gables, Fla.
Cushing, Robert Glenn	3	M	Commerce
Cushman, Maurice Edward	4	AE	Portland, Maine

Daber, Thad Joseph	3	A	Mt. Airy, N. C.
Dabney, William Cecil, Jr.	3	ChE	Atlanta
Daitch, Isreal Isadore	2	T	Waynesboro
Dakin, Myron Haines	1	Co	Teaneck, N. J.
Dales, Bertram Burdell, Jr.	5	CoE	Waynesboro
Dallis, Park Andrew	3	AE	Atlanta
Dames, Ralph Joseph	2	M	Kearny, N. J.
D'Amico, Edward Albert	1	En	Elberton
Daniel, Albert Gallatain	Sp		Atlanta
Daniel, Benjamin Sewell	1	Co	Chipley
Daniel, Robert John	4	M	Norfolk, Va.
Daniell, Hampton Jack	3	E	Villa Rica
Danna, Dominic	1	En	St. Louis, Mo.
Darby, Jack Watson	2	GE	Jacksonville, Fla.
Dasher, Marion Nesbit	2	GE	Augusta
Daughtry, Claude Leon	3	M	Avondale Estates
Daughtry, Lee Curtis	3	M	Macon
Daughtry, George W. E.	2	CoM	Macon
Davenport, Merritt Beall	2	E	Atlanta
David, Preston Harley	3	T	Atlanta
Davidson, George	1	En	Port Glascow, Scotland
Davis, Benjamin Hermann	1	En	Wooster, Ohio
Davis, Craig Carlton	1	En	Atlanta
Davis, Clayton Jay	1	En	Orlando, Fla.
Davis, Jerry Alva, Jr.	4	M	Perry
Davis, John Blount	1	En	Athens
Davis, John Craigmiles	5	CoChE	Hot Springs, N. C.
Davis, James Joseph, Jr.	4	ChE	Atlanta
Davis, Logan Douglas, Jr.	1	Co	Palm Harbor, Fla.
Davis, Louis Elkin	2	M	Brooklyn, N. Y.
Davis, Raymond Gilbert	4	ChE	Atlanta
Dawsey, James Richard	3	M	Dothan, Ala.
Day, Thurman Oscar	2	CoM	Richmond, Va.
Deal, Wayman Ray Donovan	1	Co	Donovan
Deans, Parker Dudley	4	ChE	Savannah
DeCardenas, Juan Antonio	3	E	Havana, Cuba
deCastro, Jose Fernandez	3	ChE	Havana, Cuba
DeCastro, Raymond Martinez	2	ChE	Havana, Cuba
Deck, William Lee	2	CoT	Waynesboro
Decker, Paul Herman	2	M	Laurel, Miss.
DeFriese, Frank Davis	1	IM	Atlanta
deGive, Louis Philippe	3	IM	Atlanta
DeHart, John Randle	3	E	Miami Beach, Fla.
Deixler, Laszlo	2	M	Habana, Cuba
Dekle, Marcus Reid	1	Co	Cordele

Dekle, Samuel Denton	4	IM	Atlanta
DeLany, Judson William	1	IM	Atlanta
DeMatteis, John Jefferson	4	ChE	Homer City, Pa.
deMontmollin, James Mellon	1	Co	Clinton, S. C.
Denton, Frank Lester	1	Co	Macon
dePeterse, Frank, Jr.	4	T	Atlanta
Deshon, Ray Marvin	1	Co	St. Joseph, Mo.
DeWitt, Philip Doddridge	3	M	Panama City, Fla.
DeWitt, Robert Eugene	1	En	Califon, N. J.
Dickey, Joe Gilbert	4	M	Decatur
Dickinson, William Lawrence	1	En	Gatun, Canal Zone
Dieckman, Robert William	1	En	Hollis, N. Y.
Dillard, Robert Bascomb, Jr.	2	E	Decatur
Dillard, Samuel Harwell III	1	En	Atlanta
Dillon, John Francis, Jr.	4	CoM	Birmingham, Ala.
Dillon, Thomas William	4	CoE	Savannah
Dinsmore, Francis Philip	2	CoChE	Decatur
Dixon, Ross Milam	4	CoM	Atlanta
Dodd, Richard Euclid, Jr.	1	Co	Lake Wales, Fla.
Dodds, William H.	3	M	Atlanta
Dodson, Boykin Robinson	2	IM	Atlanta
Doe, William Bethel, Jr.	4	ChE	Jacksonville, Fla.
Domingos, Karl Kirk	5	CoE	Macon
Donald, Herbert Lee, Jr.	3	ChE	Ridgewood, N. J.
Dooley, Ralph Edward	1	Co	Macon
Dorsey, Samuel Erwin, Jr.	1	En	College Park
Doster, Alexander Stephen, Jr.	1	Co	Atlanta
Doster, Thomas Edwin	3	CE	Lancaster, S. C.
Dougherty, Jack Delaney	1	IM	Atlanta
Doughty, David Winston	1	Co	Atlanta
Doyle, Joseph Patrick	1	Co	Savannah
Dreger, John Spalding	1	En	Atlanta
Drennon, Luther Zahn	4	S	Atlanta
Drew, John	3	CoChE	Miami, Fla.
Drewry, Ivey Oscar	4	CoM	Birmingham, Ala.
Dudley, Charles Bondurant	1	En	Greenville
Duggan, John Tanner	4	CoChE	Warthen
Duke, W. Harrison	5	CoE	Corning, N. Y.
Dukes, Clifton Abraham	1	En	Decatur
Dukes, James Henderson	2	Cer	Decatur
Dulin, Woodrow Wood	4	M	Atlanta
Duncan, Conrad Howard	3	CoChE	Valdosta
Dunlop, Robert Horace, Jr.	4	IM	Atlanta
Dunn, Jack Randolph	1	En	Maplewood
Dunson, Henry Cary	3	T	LaGrange

Dunson, Jarrell Ridley, Jr.	2	T	LaGrange
DuPree, Dan Hughes, Jr.	3	M	Athens
Durden, Joseph Crump	2	CoT	Columbus
Durham, Howard Long	1	En	Atlanta
Durkin, William Vincent	2	CoM	Savannah
Dusenbury, Millard Reese	2	ChE	Brunswick
Dyal, Enoch Orville	3	CoChE	Cocoa, Fla.
Dye, Harold Anthony	2	Cer	Atlanta
Dyes, Alvin Berry	2	CoChE	Ft. Valley
Dyke, Henry Elmer	1	En	Selma, Ala.
Dykes, Aubert Cleveland, Jr.	2	CE	Farmerville, La.
Dykes, Osborne Jefferson	2	M	Shreveport, La.
Dzamba, John Robert	2	M	Bayonne, N. J.
Eagar, Charles Harrison	1	En	Chattanooga, Tenn.
Eagleton, Godwin Arthur	4	CoCE	Marshals Creek, Pa.
Earle, John Daniel, Jr.	4	Ch	Asheville, N. C.
Earthman, Henry Bivins	4	IM	Decatur
Eastman, Donald Roger, Jr.	3	AE	Atlanta
Ebdon, Thomas Joseph	4	E	Gatun, Canal Zone
Echelson, George	5	CoM	Hartford, Conn.
Ecker, Leonard David	3	E	Rochester, Pa.
Eckis, Robert Wayne	2	E	Ft. Lauderdale, Fla.
Ector, William Howard	2	IM	West Point
Eddy, Herbert Claxton	1	En	Atlanta
Edwards, Albert George	3	E	Atlanta
Edwards, George Lee	4	IM	Macon
Edwards, Grover William	1	En	Highlands, N. C.
Edwards, William Way, Jr.	4	E	Atlanta
Eggleston, Edmond Overton	1	IM	Atlanta
Ehrhardt, Steve Pace	1	En	Atlanta
Eichner, Albert David	1	En	New York, N. Y.
Eidson, Avery Clegg	1	IM	Columbia, S. C.
Eidson, William Blanchard	1	En	Atlanta
Elam, Stanleigh Friend	1	En	Ashland, Ky.
Elam, Sam Stites	4	CoM	Bradenton, Fla.
Eldredge, Paul Judson	4	ChE	Atlanta
Ellington, John Edward	1	Co	Edison
Elliott, Dick Downing	4	IM	Atlanta
Elliott, Thomas Arthur	3	M	Athens
Elrod, Roy O'Neal	2	CE	Atlanta
Emery, Joseph Hill	2	E	Savannah
Emin, Ali Giray	G-T		Najilli, Turkey
Emmons, Robert Edwin	4	E	Memphis, Tenn.
Emrey, Earl Brackett, Jr.	4	M	Decatur

Engel, Joseph Anthony	1	Co	Savannah
English, William Allison	1	IM	Mt. Pleasant, Tenn.
Epstein, Edward, Jr.	1	En	Atlanta
Erwin, William Hammond	1	Co	Albany
Estes, Cecil Bennett, Jr.	3	ChE	Columbus
Estes, William Barney	2	IM	Douglasville
Etnire, Robert Clair	1	Co	Cedartown
Evans, Harry Gunn	1	Co	San Antonio, Texas
Evans, Paul Howard, Jr.	3	M	Atlanta
Evans, William Doughty, Jr.	4	IM	Atlanta
Eve, Wade Hampton	3	IM	Savannah
Eveland, William Perry	2	GE	Freeport, L. I., N. Y.
Everett, Phillip Eugene	4	CoM	Miami, Fla.
Evert, William Burton	1	En	Mission Beach, Calif.
Evins, William Hammock	2	A	Atlanta
Faber, Howard Keeling	3	CE	Bloomfield, N. J.
Fagan, Robert Havard	G-AE		Atlanta
Fain, Edgar McArthur	1	En	Doerun
Faircloth, Loonis Gaston	2	E	Seville
Falk, David Beauregard	2	CoChE	Savannah
Falks, Jack Bansley	3	A	Atlanta
Falligant, Louis Alexander	2	CoM	Ft. McPherson
Fambro, George William	2	CoM	Fitzgerald
Fambrough, Edward Clark	4	IM	Atlanta
Fannon, Marcy Barat	2	M	Miami Beach, Fla.
Farris, James Christie	3	CoE	Columbus
Faw, James Enoch, Jr.	2	CoM	Westfield, N. J.
Feagle, James Marion	4	CE	Athens
Featherston, Charles Nicholas	1	IM	Rome
Fell, Charles Linwood	1	En	Westfield, N. J.
Felsher, Hal Curtis	4	CoChE	Brooklyn, N. Y.
Felton, James Newton	G-M		Durham, N. C.
Fendley, Pope	4	E	Carrollton
Ferguson, George Wesley	1	En	Temple
Ferguson, Roy Washington	1	En	Atlanta
Fernandez, Carlos Enrique	4	M	Havana, Cuba
Fero, Donald Alva	1	En	Atlanta
Ferrari, Joseph Salvadore	2	CoM	Faunsdale, Ala.
Ferrer, Federico Vicente	2	M	Santiago, Cuba
Ferris, William Darius, Jr.	1	IM	Decatur
Few, Olin Deloney, Jr.	2	M	Gainesville
Fey, George Frederick	2	CoE	Atlanta
Fields, John Henry	2	M	Hampton
Finch, Charles Hunter	1	En	Atlanta

Fink, Douglas Gardner	4	ChE	Baldwin, L. I., N. Y.
Fisher, Hiram Thomas	2	E	St. Petersburg, Fla.
Fiss, Edward Castle	G-ChE		Rolla, Mo.
Fitts, William Francis	1	Co	Ridgewood, N. J.
FitzSimons, Alvin Roux	4	IM	Atlanta
Flanigen, Cameron Douglas	2	M	Athens
Flegenheimer, William Henry	4	ChE	Albany
Fleming, Howard Hughes	1	En	Atlanta
Fleming, Jack Gleason	4	IM	Bradenton, Fla.
Flemister, Harry Armstrong	2	E	Atlanta
Fletcher, Delbert Van	3	CoChE	Tarpon Springs, Fla.
Fletcher, Phillip David	2	ChE	Appalachia, Va.
Fletcher, Robley Jones	1	Co	Horsey, Va.
Flowers, Gewin Walter	2	ChE	Norcross
Floyd, Frank Emmett, Jr.	4	E	Atlanta
Floyd, John David	1	IM	Atlanta
Fly, Joel Orval, Jr.	4	IM	Shelbyville, Tenn.
Flynt, Collins Moore	3	IM	Decatur
Flynt, Edward Reid	4	CoE	Sparta
Fontaine, Eugene Vincent	4	CoE	Brooklet, Fla.
Foote, George Post	2	A	Atlanta
Ford, Frank Hewitt, Jr.	2	ChE	Hattiesburg, Miss.
Ford, George Pratt	2	ChE	Alma
Ford, Paul Beauregard	3	E	Atlanta
Ford, Robert Sedgwick	4	M	Pascagoula, Miss.
Ford, William Alfred	1	En	Columbus
Fordham, Roy Chappel	4	CoM	Gibson
Forker, Raymond Anthony	2	M	Hemstead, N. Y.
Forney, Adrian Kenneth	4	AE	Augusta
Forrer, John Jacob, Jr.	1	En	Richmond, Va.
Forrest, Richard Eyre	1	En	Lansdowne, Pa.
Forsythe, William John	2	CE	Brooklyn, N. Y.
Fort, William G. S.	3	CoE	Cornelia
Foster, Joseph Hudson, Jr.	3	T	Roswell
Foulds, George Gordon	5	CoM	Hutchinson, Kans.
Fowler, Edgar Taylor	1	En	Loris, S. C.
Fowler, James Willard	2	CE	East Point
Fowler, Sam Hall	4	CE	Devereux
Fox, Carl Louis, Jr.	2	ChE	Atlanta
Franca, Mario Antonio	2	IM	Havana, Cuba
Francis, Henry Clinton	1	En	Big Rock, Tenn.
Frank, Herbert Jacob	3	CoCE	Ridgewood, N. J.
Fraser, Jack Scott	4	CE	Ozone Park, N. Y.
Fravega, Anthony Thomas	2	Co	Memphis, Tenn.
Freedman, Harold J.	3	E	Great Neck, L. I., N. Y.

Freeman, Charles Eakes, Jr.	1	En	Atlanta
Freeman, Carroll Newton, Jr.	1	En	Atlanta
Freeman, John Howard, Jr.	2	M	Greenwood, Miss.
Frey, James Mayes	1	En	Marietta
Frey, Ralph Darwin	2	M	Saxtons River, Vt.
Frierson, Harry Walton	2	CoChE	Columbia, Tenn.
Frierson, William DeLancey	3	M	Decatur
Fry, Thomas Albert, Jr.	2	ChE	Decatur
Frye, John Spencer	4	T	Atlanta
Fryer, James William, Jr.	2	IM	Nashville, Tenn.
Fullenlove, John Junius	1	En	Atlanta
Fuller, Bryant	1	Co	Mountville
Fuller, Herbert Kaufman	2	CoT	West Point
Fulton, Wilbur Dull	1	Co	Winston-Salem, N. C.
Fultz, Bennett Marion	1	En	Miami, Fla.
Funches, William Walton	1	En	Mobile, Ala.
Funderburk, Horace Boyce, Jr.	1	Co	Bainbridge
Funderburk, Joe Carmichael	2	CoChE	Bainbridge
Funderburk, Thomas Claude, Jr.	1	En	Bainbridge
Furlow, Timothy Mack	3	IM	Americus
Furlow, William Alex. Stephens, Jr.	1	IM	Columbia, S. C.
Furlow, William Meriwether, Jr.	4	E	Albany
Furman, Robert Lassiter	1	En	Henderson, N. C.
Gadd, Wesley Pavis	3	A	Wallingford, Conn.
Gaddis, Millard Junior	3	M	Quitman
Gailey, Franklin Bryan	2	ChE	Atlanta
Gaines, John Gregory	2	ChE	Dallas, Texas
Gainey, John DeLoy, Jr.	2	GE	Atlanta
Gaissert, Lawrence, Jr.	4	CoCE	Griffin
Gale, Thomas Rogers	2	CoE	Tampa, Fla.
Gammill, Billy Reed	2	CoChE	Camden, Ark.
Garber, Karl Usher	1	En	Atlanta
Garcia-Tunon, Alberto	3	ChE	Havana, Cuba
Gardner, Frank Hugh, Jr.	2	CoChE	Hattiesburg, Miss.
Garner, Floyd	1	Co	Sherwood, Tenn.
Garner, Hugh Manson	1	Co	College Park
Garner, Thomas Edwin	2	A	Decatur
Garner, W. Stokely	4	T	McDonough
Garrard, Otis	1	IM	Atlanta
Garrard, Oscar Julian	2	M	Miami Beach, Fla.
Garrett, William Oscar	1	Co	No. Little Rock, Ark.
Garrison, Webb Black	1	Co	Covington
Garrison, William Ernest	1	Co	Covington
Garst, Robert Ernest	1	Co	Louisville, Ky.

Garvin, William Harold	5	CoChE	Weleetka, Okla.
Gassenheimer, Irvin, Jr.	4	E	Montgomery, Ala.
Gaston, John Barber	3	IM	York, Ala.
Gaston, Max Edward	4	M	Pittsburg, Kans.
Gaubis, Leonard Louis	2	GE	Westfield, N. J.
Gauntt, Henry LeHardy	1	En	Chattanooga, Tenn.
Gavin, Chester, Jr.	4	IM	Ft. Gaines, Fla.
Gay, Lewis Benjamin	2	E	Atlanta
Gay, Logan Thomas	1	A	Cuthbert
Gaymon, Harold Tanner	1	Co	Bartow, Fla.
Gegan, Ambrose Joseph, Jr.	2	M	Jersey City, N. J.
Geiger, Lawton DeLany	3	A	Jacksonville, Fla.
Geiger, Quenton Prevatt	1	Co	Jacksonville, Fla.
Gelders, Morris Victor	3	CoE	Fitzgerald
Gennari, Albert Boniface	1	Co	West Stockbridge, Mass.
Gennari, Jervis Joseph	2	CoE	West Stockbridge, Mass.
Gerding, Benjamin Franklin	4	M	Ossining, N. Y.
Gheesling, Henry Carlton, Jr.	2	IM	Atlanta
Gibbons, Harry Meikleham	3	CoT	Rome
Gibbs, Robert Irwin, Jr.	1	En	Atlanta
Gibbs, Robert Mack	3	M	Lovejoy
Gibeling, Robert Walter	2	CoM	East Point
Gibian, Richard	1	En	Montgomery, Ala.
Gibson, Frank	4	A	Copperhill, Tenn.
Gibson, John Ramsay	2	CoM	St. Petersburg, Fla.
Gibson, William Carson	3	IM	Atlanta
Gibson, William Claude, Jr.	3	CoT	Griffin
Giges, Horace Melvin	3	E	Bronx, New York, N. Y.
Gilbert, James Edward	4	ChE	Quincy, Fla.
Giles, Cuthbert Guerrard	4	IM	Atlanta
Gillenwater, Joe Baron	3	CoM	Bristol, Tenn.
Gillespie, Surles Oscar, Jr.	3	T	Atlanta
Gillon, Elam Randolph, Jr.	2	M	East Point
Gilmer, Clarence Lee	3	E	Birmingham, Ala.
Gilmore, John, Jr.	2	GE	Atlanta
Givens, Albert Chapman, Jr.	3	IM	Beckley, W. Va.
Glass, Joseph Ernest	5	CoM	Connelly Springs, N. C.
Glassman, Herbert Haskell	1	A	Dorchester, Mass.
Godsey, John Clarence	1	En	Laurens, S. C.
Goerlitz, Joseph Julius	1	En	St. Joseph, Mo.
Goette, Martin Amorous, Jr.	4	A	Hawkinsville
Goldberg, Joseph	2	E	Philadelphia, Pa.
Goldgar, Myron	2	CoChE	Macon
Goldman, Mortimer Laskar	4	CE	Atlanta
Goldstein, David Judea	3	T	LaGrange

Goldstein, Herbert Bernard	3	T	Atlanta
Gonchar, Sol	2	M	Savannah
Gonzalez, Rogelio Cartaya	2	M	Cienfuegos, Cuba
Gooch, Fred Peary	2	CoM	Pittsburgh, Pa.
Goodgame, James Hamilton	3	CoChE	Camden, Ark.
Goodman, Charles Mason	1	En	Orlando, Fla.
Goodman, William Marcus	4	CoChE	Memphis, Tenn.
Goodwin, Benjamin Schoppaul	4	CoM	St. Augustine, Fla.
Goodwin, James Pierce, Jr.	1	En	College Park
Goodyear, Charles Porter	5	CoChE	Brunswick
Gordon, Jack Benjamin, Jr.	1	En	Atlanta
Gordon, John Russell	2	M	Winston-Salem, N. C.
Gordy, James Huff	4	CE	Atlanta
Goree, Churchill Pomeroy III	1	En	Atlanta
Gorman, Allan Ross	2	IM	Chicago, Ill.
Goulding, Frank Ross	4	CE	Atlanta
Gourley, Raymond Carl	4	T	Atlanta
Gower, Leonard Frank	1	A	Nashville, Tenn.
Grace, Holt Buff	3	Cer	Elko
Graf, Edward	1	En	Palisade, N. J.
Graf, Francis	2	M	Atlanta
Graham, George Henry	1	En	Lansing, Mich.
Grant, William James	4	IM	Waycross
Graves, Albert Dale	4	CoCE	Springfield, Mo.
Graves, Clarence W., Jr.	4	CoE	Canton, Ohio
Gray, Charles Harold	1	Co	Fitzgerald
Gray, Frank Aird	1	En	Jacksonville, Fla.
Gray, John Lawrence	3	CoChE	Columbus
Gray, William Franklin	3	E	Atlanta
Grebinar, Herbert Lloyd	3	ChE	Brooklyn, N. Y.
Green, Elmer Lamar	3	CoM	Macon
Green, James Thomas	2	E	Jefferson City, Mo.
Green, Theodore Eugene	2	M	Atlanta
Greene, Fred Herbert	2	CoM	Somerset, Ky.
Greene, Harry Thornton	1	Co	Waynesboro, Va.
Greene, James William	3	IM	Smyrna
Greene, Palmer Gibson	1	En	Cordele
Greene, William Carl	1	Co	Somerset, Ky.
Greer, John Augustus, Jr.	4	CoChE	Atlanta
Greeson, Richard Orval	1	En	Trion
Gregory, Joseph E.	2	CoE	Pembroke, Ky.
Gregory, Warren Collins	1	En	Atlanta
Gregory, William Edmund	2	M	Havana, Cuba
Gribble, James Thomas, Jr.	2	GE	Sylva, N. C.
Griffin, Benjamin Riegel	3	GE	Bethlehem, Pa.

Griffin, Henry Clay	1	En	Montevallo, Ala.
Griffin, Raymond Marion, Jr.	3	CoCE	Savannah
Grogan, Austin Ladson	2	ChE	Clinton, Tenn.
Grogan, Gurdie Pascal, Jr.	1	En	Atlanta
Grogan, Thomas Jefferson, Jr.	3E		Atlanta
Grommet, Clifford Charles	G-M		Atlanta
Groover, Carl Wesley, Jr.	Sp		Ball Ground
Groover, Marshall Emory	2	IM	Ball Ground
Grossman, Frank David	3	CoChE	Brunswick
Grubb, William Clay	3	M	Dothan, Ala.
Gruters, Ernest George	3	E	New York City, N. Y.
Guerin, Richard Eugene	3	CoE	Atlanta
Guill, George Porter	1	Co	Union City, Tenn.
Gunn, Fred Allyn	2	CoE	Genola
Gunn, Graham Lee	3	CoM	Crawfordville
Gwaltney, Eugene Cleveland, Jr.	2	M	Columbus
Gwillim, Reese Coulter	1	Co	Fairfield, Ala.
Haefele, Carl John	1	Co	West Brighton, L. I., N. Y.
Haeger, John Ralph	2	E	Atlanta
Hagedorn, Arthur, Jr.	2	E	West Point
Hageny, Mark Conwell	2	E	Atlanta
Haggart, Robert Stevenson, Jr.	2	CE	Atlanta
Hagood, Nesbitt Ward, Jr.	2	IM	Hartford, Conn.
Hague, Harold James, Jr.	2	E	Atlanta
Haile, James Ernest	4	M	Cedartown
Hailey, William Kelso	2	GE	Lookout Mt., Tenn.
Haimovitz, Paul	1	IM	Tampa, Fla.
Hale, Jack Wiley	1	IM	Atlanta
Hale, Robert Lorin	1	En	Decatur
Hale, Stephen Cutler, Jr.	2	M	Atlanta
Hall, Ben Harrison	2	T	Atlanta
Hall, Ernest William	2	M	Memphis, Tenn.
Hall, F. Stephen, Jr.	4	IM	Atlanta
Hall, John Grady, Jr.	1	En	Metter
Hall, Kenneth Raymond	1	En	Atlanta
Hall, William Tarrill	4	A	Nashville, Tenn.
Halman, Robert Marion Jackson	4	M	LaGrange
Hamby, Walter Strauss	1	En	Copperhill, Tenn.
Hames, William Charles	2	Cer	Atlanta
Hamil, James Bivings	2	CoM	Macon
Hamilton, David Downing	1	En	Dalton
Hamilton, James Phillip	1	En	Sturgis, Mich.
Hamilton, Joseph Starke, Jr.	2	A	Atlanta
Hamilton, William Briggs	1	Co	Edgefield, S. C.

*Hamlett, Frank Robertson	2	E	Tampa, Fla.
Hamly, Charles Dana	1	En	Coral Gables, Fla.
Hammett, James Harold	1	Co	Hogansville
Hammett, Manley Huie	2	M	Atlanta
Hammond, Charles Evans	2	E	Atlanta
Hammond, Dosier D., Jr.	4	T	Columbus
Hammond, John Rudolph, Jr.	3	M	Cristobal, Canal Zone
Hammond, James Withers	3	T	Rome
Hammond, Pierce	4	CoE	Barnesville
Hampton, C. L.	2	ChE	Galax, Va.
Hanahan, James Ross	1	IM	Atlanta
Hancock, Frank Brunson	1	Co	Dublin
Hannon, Lucius, Jr.	4	CoCE	Atco
Hansen, Raymond Milton	1	Co	Stroudsburg, Pa.
Hara, Edward Ewald	2	ChE	Drexel Hill, Pa.
Harbin, William Thomas	4	ChE	Atlanta
Hard, John Stewart	1	En	Greenville, S. C.
Hardison, John Wesley	1	Co	Ft. Valley
Hargrett, Haines Hilsman	3	M	Atlanta
Harlan, Neil English	2	IM	Englewood, Colo.
Harmon, John Marion	2	M	Swainsboro
Harmon, John William	4	ChE	Benevolence
Harmon, Lloyd Crawford, Jr.	1	En	Concord, N. C.
Harp, Osa Jacksan	1	Co	Miami, Fla.
Harrell, Irving Jackson, Jr.	2	CoM	Bainbridge
Harriman, Dean Emerson, Jr.	3	CoE	Tampa, Fla.
Harris, Ben Cris	4	M	Atlanta
Harris, Durward Gates	1	En	Syracuse, N. Y.
*Harris, Henry Bullard	2	CE	Dothan, Ala.
*Harris, Lucian Jefferson	3	CE	Hopkinsville, Ky.
Harris, William Henry	1	En	Decatur
Harris, William Randolf	4	CoCE	Thomasville
Harrison, Albert Edwin	3	CoE	Hartwell
Harrison, John Sams	4	IM	Jackson
*Harrison, Nat Cole	4	IM	Atlanta
Harrison, Nathaniel Goodman	3	M	Atlanta
Harsh, Forrest Rutherford	4	M	New York City, N. Y.
*Hart, David Anderson	2	M	Leonia, N. J.
Hart, James Alexander, Jr.	1	En	Charlotte, N. C.
*Harter, Robert Jackson	2	CoE	Augusta
Harvey, John William Dillard	3	Ch	Atlanta
Harvey, Russell Winston, Jr.	1	IM	Atlanta
Harwell, Alfred Walter	2	CoM	Ensley, Ala.
*Haskell, Blanton Winship	1	Co	Macon
*Haskell, George Owens, Jr.	4	CoChE	Macon

Hassett, William Vernon	5	CoT	Columbus
Hasty, Wayland Arthur	2	M	Griffin
Hawkins, Albert Taylor	2	CoChE	Waynesboro, Va.
Hayes, Edmund Anthony, Jr.	2	CE	Highland Park, N. J.
Hayes, John Hammond	4	M	St. Petersburg, Fla.
Haymans, Walter Harold	2	M	Savannah
Haynes, James Augustus	4	IM	Atlanta
Hays, Glenn Bate	3	CoChE	Etters P. O., Pa.
Hays, Howard Sebree	2	GE	Chattanooga, Tenn.
Head, Roy Carlton	1	IM	Chamblee
Head, Robert Frazier, Jr.	3	CE	Atlanta
Headrick, Beryl Ricky	3	IM	College Park
Hearn, Richard Larkin	4	CoT	Atlanta
Hearne, Roy Al	2	IM	Longview, Texas
Heatwole, James Walter	3	CoChE	Elizabethton, Tenn.
*Heckman, David Allen	1	En	Glen Gardner, N. J.
Heffernan, William Hughes	2	E	Augusta
Heidler, Charles Drew	1	En	Atlanta
Heinz, Henry Charles, Jr.	1	En	Atlanta
Heitz, Charles Eldon	2	CoM	Ft. Scott, Kans.
*Helin, Walter Engleberthe	1	Co	Teaneck, N. J.
Helm, Earl Wilson	2	ChE	Franklin, Ky.
Helsdon, John Hebard	2	GE	Buffalo, N. Y.
Helton, Bernard Lamar	1	En	Sandersville
*Henderson, Dawson Adams, Jr.	5	CoT	Cornelia
Henderson, Joseph Wallace	3	E	Lyons
Henderson, William Bennett	1	Co	Memphis, Tenn.
Henley, Carter Tate	2	E	Smyrna
*Henley, Knowles Hyer	4	M	Portsmouth, Va.
Hennigh, Clifford Emerson	1	En	Cedartown
Henry, King Dick	4	CoT	Cassandra
Hensler, Homer Henry, Jr.	2	A	Ada, Okla.
Henson, Carlton Monroe	1	En	Athens
Herd, Harry Wilmer	3	E	Atlanta
Herring, Henry Henderson, Jr.	4	Ch	Rockmart
Herring, Rufus Jefferson	4	CoChE	Savannah
Herron, Arthur Marvin	2	CoT	Duluth
Hershcopf, William Sigmund	1	En	Long Beach, N. Y.
Herzog, Richard Blum	1	IM	Atlanta
Heselton, Leslie Richmond	1	En	San Diego, Calif.
Heubeck, John	1	En	Baltimore, Md.
Heycey, Stephen George	4	CoE	Bayonne, N. J.
Hicklin, William James	2	CE	Jacksonville, Fla.
Hicks, Hiram Marion, Jr.	1	Co	Lincoln, Ala.
Hiegel, James Anthony	1	A	Winter Park, Fla.

Hiepe, William ..... 1 Co ..... St. Petersburg, Fla.
Higgins, Fred Thornton ..... 1 Co ..... Atlanta
Higgins, James Spence ..... 2 IM ..... Dalton
Higgins, William Leon ..... 1 IM ..... Atlanta
Hightower, Nathaniel Lee, Jr. ..... 4 T ..... Atlanta
Hilburn, James Eugene ..... 1 Co ..... Dublin
Hill, Francis Marion ..... G ..... Atlanta
Hill, Henry Cooper ..... 3 CoM ..... Winder
Hill, Henry James ..... 3 IM ..... Atlanta
Hill, Thomas Lee ..... 4 IM ..... Atlanta
*Hiltz, Robert Grover ..... 1 Co ..... Chattanooga, Tenn.
Hinton, Ben Woodfin ..... 3 E ..... Reynolds
*Hinton, Charles Vernon ..... 1 Co ..... Atlanta
Hirsch, William Irwin ..... 1 A ..... Brooklyn, N. Y.
Hite, Jonas Ewing, Jr. ..... 4 ChE ..... Jackson, Miss.
Hitt, Jack ..... 1 IM ..... Atlanta
Hoag, George Frederich ..... 1 En ..... Rouses Point, N. Y.
Hoagland, Arthur Moore, Jr. ..... 4 CE ..... Atlanta
Hobbs, Charles Augustus ..... 2 E ..... Atlanta
Hodge, James Anderson ..... 1 En ..... Dames Ferry
Hoehl, William Sidney ..... 1 En ..... Coral Gables, Fla.
Hoff, Frank Arnold ..... 1 En ..... Bethany, Conn.
Hoffer, Jerome, Jr. ..... 3 AE ..... Camden, S. C.
Hogan, William Joseph III ..... 2 IM ..... Atlanta
Hogg, James Vanderbilt ..... 2 M ..... Amsterdam, N. Y.
Holder, Charles Burt, Jr. ..... G-Ch ..... Griffin
Holditch, Stanley Noott ..... 4 M ..... Atlanta
Holladay, George Hiram, Jr. ..... 3 ChE ..... Laurel, Miss.
Holland, Norman Leonwood ..... 2 E ..... Boca Grande, Fla.
Holland, Ralph Griffin ..... 2 CoCE ..... Dallas
Holland, Ralph Taylor ..... 1 Co ..... Cedartown
Holley, Joshua LeRoy, Jr. ..... 5 CoCE ..... Augusta
*Holliman, Perry Bassett ..... 1 En ..... Unadilla
Hollingsworth, Willis Ward ..... 1 Co ..... Fairfield, Ala.
Holly, George James, Jr. ..... 1 IM ..... Elizabethton, Tenn.
Holmes, James ..... G-Ch ..... Baltimore, Md.
*Holmes, Robert Stratton ..... 5 CoCE ..... Birmingham, Ala.
Holst, John Bernt ..... 4 ChE ..... Savannah
Holt, Edward Clarence ..... 1 Co ..... Byron
Holt, Frank Ward, Jr. ..... 4 IM ..... Atlanta
Holt, Riley Albert ..... 1 En ..... Decatur
Holz, Forrest Henry ..... 2 IM ..... Atlanta
Hood, Ralph Eugene ..... 4 IM ..... Atlanta
Hook, William Thomas ..... 3 CoM ..... Mexico, Mo.
*Hooker, Harris Holt ..... 3 E ..... LaGrange, Ill.

Hooker, Jeff Hart ..... 2 CE ..... Paducah, Ky.
Hooks, Archie Reese, Jr. ..... 3 CE ..... Atlanta
Hooper, Maurice Fred ..... 1 En ..... Atlanta
*Hopkin, Arthur McMurrin ..... 1 Co ..... Twin Falls, Idaho
Hopkins, John Martin ..... 2 CE ..... Morristown, N. J.
Hopkins, William Wimberly ..... 1 En ..... Atlanta
Horner, Leonard LeRoy ..... 1 En ..... Atlanta
*Hornstein, Israel ..... 3 CoE ..... Omaha, Neb.
*Hornstein, Joe S. ..... 1 Co ..... Omaha, Neb.
Horowitz, Jay Malcolm ..... 1 Co ..... Sweetwater, Tenn.
Horwood, Edgar Miller ..... 1 En ..... Montreal, Canada
Hoss, Gene Lane ..... 1 En ..... Atlanta
House, Orman Francis ..... 4 ChE ..... Atlanta
Houseal, William Bradford, Jr. ..... 2 IM ..... Birmingham, Ala.
Houston, David Osman ..... 1 En ..... Jacksonville, Fla.
*Howard, David Albert, Jr. ..... 4 E ..... Gaffney, S. C.
Howard, Milton Williams, III ..... 3 CE ..... Atlanta
Howard, Perry Luther ..... 1 En ..... Atlanta
Howard, Sewell ..... 4 E ..... Cumberland Gap, Tenn.
Howard, Willis B. ..... 1 En ..... Decatur
Howell, James Morris ..... 4 E ..... Atlanta
Howell, Robert Keil, Jr. ..... 3 T ..... West Point
Howie, Walter Woodrow ..... 3 M ..... Jackson, Miss.
Howland, William Harry ..... 2 IM ..... Atlanta
Hoyt, George Deming ..... 2 CE ..... Stratford, Conn.
Hubbard, Lex Walter, Jr. ..... 4 E ..... Tarrant, Ala.
Hubbell, Lester Earl ..... 4 IM ..... Teaneck, N. J.
Huckabee, Walter England ..... 2 CoM ..... Gay
*Hudson, Allen Clark ..... 4 A ..... Atlanta
Hudson, Frank Parker ..... 2 CoChE ..... Montezuma
*Hudson, Morley Alvin ..... 4 M ..... San Antonio, Texas
Hudson, Robert Hartfield ..... 2 CoChE ..... Waycross
Huff, Albert Burney ..... 2 ChE ..... Rome
Huff, William Wayne ..... 1 En ..... Beaumont, Texas
Huffman, Robert Wendell ..... 1 Co ..... Atlanta
Huggins, Harwell Steed ..... 2 CE ..... Atlanta
Hughes, James Warren ..... 1 IM ..... Anderson, Ind.
Hughes, Marvin Lynn ..... 1 A ..... Blytheville, Ark.
*Hughes, Thomas James ..... 3 M ..... Westerly, R. I.
Hughs, William Denson ..... 4 ChE ..... Atlanta
Huie, Edward Lynn ..... 2 M ..... Morrow
*Hume, Alfred Shepard ..... 2 E ..... Miami, Fla.
*Humphrey, Floyd Lawson, Jr. ..... 4 E ..... Waynesboro
Humphrey, Harold Grady ..... 1 Co ..... Smyrna
Humphrey, James Howard ..... 1 A ..... Atlanta

Hunt, Homer Harris	3	CoM	Jacksonville, Fla.
Hunt, William Bennett	4	M	Clermont, Fla.
Hunt, Warren Candler	1	Co	Rome
Hunter, George Lewis Cope	1	Co	Savannah
Hunter, William Francis	4	CoE	Greenville, S. C.
Hurst, Sam Thomas, Jr.	1	A	Fort Valley
Hutcheson, John Duard	2	M	Douglasville
Hutchins, Hugh Bennett	3	E	Carl
Hutchinson, Homer Gray, Jr.	3	M	Griffin
Hutchinson, James Atticus	2	CoM	Moreland
Hutchinson, Joseph Fulton	4	M	LaGrange
Hutchinson, William Huber	3	M	Austell
Huth, Herman Gay	2	M	Atlanta
Hutto, Rufus Llewellyn	4	CoE	Augusta
Hyder, Ralph Edd	1	IM	Clermont
Ingram, Louis Cumbie	1	A	Atlanta
Ingram, Thomas Newton	1	IM	Bristol, Tenn.
Ingram, Woodrow Gay	3	T	Lindale
Irons, Fred	2	CoCE	Decatur
Irwin, Edward Burns	3	IM	Atlanta
Ison, Robert Lindsey	2	IM	Atlanta
Ivey, Carl Edward	2	CoM	Limestone, Fla.
Ivey, Ira Lew	1	IM	Atlanta
Ivey, John Randolph	2	M	Atlanta
Jackson, Bruce	1	En	Matewan, W. Va.
Jackson, Irvin Gordon	1	En	Columbus
Jackson, John Esra	1	En	Blackshear
Jacob, Walter Joseph, Jr.	2	IM	Trenton, N. J.
Jacobs, John Clayton	3	ChE	Oklahoma City, Okla.
James, Roswell Coleman	1	IM	Blackshear
James, Willard Hendry	4	IM	Blackshear
James, Willis Samuel	4	T	Rossville
Jamison, Frank Dugger	1	IM	Atlanta
Jamison, William Edward	2	IM	Atlanta
January, William McMurray	1	Co	Trenton, Tenn.
Jared, Ollie Alan, Jr.	2	M	Kingsport, Tenn.
Jeffcoat, Harry, Jr.	3	M	Augusta
Jeffery, Warren Craig	1	Co.	Birmingham, Ala.
Jehan, Henry Ives	3	E	New Haven, Conn.
Jenkins, Harry Farmer	3	CoT	Rockmart
Jenkins, William Frederick	2	CoM	Fortson
Jenkins, William Raymond	4	CoT	Scottdale

Jennings, Marvin	1	Co	Sylvatus, Va.
Jimenez, Edgar Francisco	3	A	San Jose, Costa Rica
John, Franklyn Harold	1	En	Atlanta
Johns, Quinton Roy	1	En	Miami, Fla.
Johnson, Charles Beverly	4	IM	Atlanta
Johnson, Charles Vernon	4	CE	Poplar Bluff, Mo.
Johnson, Dan	3	IM	Atlanta
Johnson, Drew Liddell	4	IM	Atlanta
Johnson, Edgar Dunson	2	CoE	LaGrange
Johnson, Gerald, Jr.	4	CE	Jacksonville, Fla.
Johnson, Gustave Franklin	1	En	Atlanta
Johnson, John LaFayette	3	CoE	Macon
Johnson, Luther Reese	3	IM	Atlanta
Johnson, Mercer Harris	1	En	Siloam
Johnson, Perry Wendell	1	En	Corning, N. Y.
Johnson, Raymond Arthur, Jr.	2	M	Macon
Johnson, Robert Linder, Jr.	4	CoCE	Rome
Johnson, Roy Theodore	3	IM	Atlanta
Johnson, Verne Wesley	2	GE	Malden, Mo.
Johnson, William Beverly	3	T	Atlanta
Johnston, Darling Luther	4	ChE	Atlanta
Johnston, Edwin Dargan	2	CoChE	Atlanta
Johnston, John Edmon	1	Co	Valdosta
Johnston, Robert Samuel	1	Co	Atlanta
Johnston, William Bo	4	IM	Savannah
Johnston, William Marshall	3	E	Atlanta
Joiner, Ernest Lee, Jr.	3	AE	Hialeah, Fla.
Joiner, Henry Doherty	1	En	Athens
Jones, Albert Edward	4	IM	Macon
Jones, Alyn Richard	2	M	Griffin
Jones, Ben Perry	3	IM	Canton
Jones, Charles Horace, Jr.	2	M	Thomasville
Jones, Donald Bradford	1	En	Atlanta
Jones, Edward LeRoy	2	GE	Atlanta
Jones, Frederic Charles	3	AE	Syracuse, N. Y.
Jones, Grady Hogan	1	Co	Bremen
Jones, Homer Hardaway	1	En	Atlanta
Jones, James Everett	2	E	Atlanta
Jones, John Hardin, Jr.	2	M	Chattanooga, Tenn.
Jones, John Paul	1	En	Atlanta
Jones, Robert West	2	CoChE	Cedartown
Jones, Thomas David	1	Co	Atlanta
Jones, Thomas Richard	3	IM	Dalton
Jonsson, Gustaf	1	En	Rutherford, N. J.
Jordan, Harry Sheppard, Jr.	2	CoChE	Atlanta

Jordan, Leland K., Jr.	4	IM	Monticello
Jordan, Samuel Jones	1	Co	Porterdale
Jordan, William Hingston	4	IM	Anniston, Ala.
Joseph, William Blackson, Jr.	1	En	Columbus
Justi, Charles Raine, Jr.	1	En	Atlanta
Kacik, Raymond Joseph	1	Co	Tottenville, S. I., N. Y.
Kamack, Henry Joseph	2	CoChE	Atlanta
Kaminky, Otto William	4	CoChE	Mendota, Ill.
Kanze, Albert Neuburger	1	En	Freehold, N. J.
Karlick, Joseph	4	T	Atlanta
Karp, Henry Bernard	4	AE	Atlanta
Kauffman, William Porter	2	ChE	Webster, Grove, Mo.
Keating, John Francis	G-Ch		Wilkes-Barre, Penna.
Keating, Walter Franklin	1	IM	Rossville
Keener, Ross Cangney	1	En	Groves, Texas
Keifer, Frederick John	1	Co	Ashland, Ky.
Keith, William Walton	4	CoM	Marietta
Kell, Thomas Nance	1	En	Decatur
Keller, Joseph Adreon, Jr.	3	M	Baltimore, Md.
Kelley, Milton Eugene	1	En	Atlanta
Kelly, Bertie Benjamin	1	IM	Raleigh, N. C.
Kelly, James Carroll	3	M	Miami, Fla.
Kelly, John William	1	En	Orlando, Fla.
Kelly, Leo William	1	En	Atlanta
Kemper, Richard Thompson	2	Co	Atlanta
Kendrick, Garland Lee	1	En	Arlington, Va.
Kendrick, John Thomas	3	IM	Atlanta
Kendrick, Lemuel Thornton	sP-Pre-Med.		Atlanta
Kennedy, Albert Thornton	1	En	Atlanta
Kerby, Cecil Hyman	2	CoM	Waycross
Kerby, Thomas William, Jr.	4	CoCE	Waycross
Kerby, Wilford Dixon	2	E	Atlanta
Kern, Stanley Felix	G-Ch		Olivia, Minn.
**Kesler, Stanley, Jr.*	2	M	Jefferson
**Kessler, Roy Melvin*	2	T	Atlanta
Ketchey, Charles Franklin	2	CoE	Winter Haven, Fla.
Kilcrease, Dana Lucian	4	CoE	Waycross
Kilgore, William Huey	1	En	Villa Rica
Kimbrough, Robert Landon	1	A	Guthrie, Ky.
King, Joseph Henry	1	Co	Anniston, Ala.
Kirst, Walter George, Jr.	4	AE	Little Rock, Ark.
Kirstein, Alvin Ewald	2	E	Asheville, N. C.
Kitchens, Charles Dillon	3	CE	Warrenton
Klamm, Victor Elmer	2	E	Sheridan, Wyoming

Klein, Edward William, Jr.	4	M	Atlanta
**Klein, Maurice*	2	ChE	Augusta
**Kleven, Walter Herman*	3	AE	Gilby, N. D.
**Kneisel, Edmund Bixby*	2	T	Atlanta
Knight, Albert Clinton	1	En	Brunswick
Knox, Vincent Edward	1	En	Dyersburg, Tenn.
Koebley, Albert Victor, Jr.	1	Co	Decatur
Koenig, Wilbur Miller	3	CoM	Baltimore, Md.
Kolakowski, Henry Ernest	1	En	Atlanta
Konemann, Marion Jackson	4	IM	Columbia, S. C.
**Kosowsky, Joseph I.*	1	Co	Bayonne, N. J.
Krauss, Daniel Richard	2	IM	Brunswick
Krauss, Otto Edmund	2	M	St. Petersburg, Fla.
Kreidler, Eugene Thomas	2	M	Staten Island, N. Y.
Krook, Leon Adolph	1	Co	Springfield, Vt.
Kruvant, Arnold Burton	2	A	Atlanta
Kuniansky, Milton	1	A	Atlanta
Kurrle, Christian	1	En	Baltimore, Md.
Kwilecki, Julian Gerard	2	A	Bainbridge
LaBorie, George Ralph	1	En	Spencerport, N. Y.
Lacefield, William Randolph	3	CoE	Florence, Ala.
Lacerenza, Joseph	2	CE	Brooklyn, N. Y.
Lackey, Dalton Eston	2	IM	Barium Springs, N. C.
Lafferty, Wilburn Davis	2	E	Canmer, Ky.
Laffiteau, Charles Augustus	1	Co	Savannah
Lamberti, Jack Joseph	2	M	New York, N. Y.
Land, Fort Elmo	Sp		Atlanta
Lane, Norman Edward	2	CE	Chapel Hill, Tenn.
Lane, Ralph Wilson	1	Co	Chester, Depot, Vt.
Lanford, Horace Whaley	1	En	Decatur
Lang, Oliver Howard, Jr.	4	CE	Moultrie
Lange, Harry Martin	3	M	Savannah
Langenwalter, Daniel Franklin	2	CoE	Twin Falls, Idaho
Lanier, Emory Sidney, Jr.	4	M	Atlanta
Largen, Edward Hightower	1	Co	College Park
Largen, James Wilson	3	T	College Park
**LaRoche, Jimmie Hughlett*	2	ChE	Cocoa, Fla.
LaRoche, John Julius	1	En	Atlanta
LaRoe, Edward Terhune	2	ChE	Greensboro, N. C.
Larrieu, Rene Antonio	2	M	Cardenas, Cuba
Laseter, Joel Brand	2	Cer	Decatur
Lasseter, James Arthur	4	CoE	Miami, Fla.
Lawrence, Jim Brooks	2	M	Molena
Lawrence, Louis	3	M	Norfolk, Va.

Lawrence, Seaborn Evans	1	Co	Ocilla
Lawrence, Tom Frank	1	En	Atlanta
Lazenby, James Milton	1	En	Decatur
Leach, Thomas Henry	1	Co	Atlanta
Leake, Paul Edmund	4	ChE	Atlanta
Leckrone, Robert Elmer	1	En	Canton, Ohio
LeCraw, Charles Stockard, Jr.	2	IM	Atlanta
Ledbetter, Jack Dykes	2	CoChE	Rome
Ledbetter, Selman Alfonzo	2	IM	Atlanta
Ledusky, John Peter	2	M	New Haven, Conn.
Lee, Asa Bell	3	CoT	Great Falls, S. C.
Lee, Ben Herman	3	ChE	Decatur
Lee, Edward Wylie	3	IM	Coconut Grove, Fla.
Lee, Robert Edward	1	En	Rome
Lee, Robert Elwood	3	AE	Far Hills, N. J.
Lee, William Clement, Jr.	3	IM	Atlanta
Lee, William Green, Jr.	3	T	Macon
Legg, Milton Franklin	3	M	Henderson, N. C.
Leggett, John Richard	4	M	Atlanta
Leightman, Bennie	4	CoChE	Memphis, Tenn.
LeMay, Jack Evans	2	CoChE	Sheffield, Ala.
Lemon, John William	2	ChE	Atlanta
Lennard, William Edward	1	En	Pelham
Lenz, Jose Carlos	1	En	Havana, Cuba
Leslie, Donald McLeod	3	E	Decatur
Lester, James Beaman	3	CoE	Conyers
Letson, William Farmer	2	A	Norcross
Lev, Milton	2	CoCE	Youngstown, Ohio
Levie, James Kellum, Jr.	3	CoE	Kwangja, Korea
Levin, Robert Bruce	3	CoChE	Miami, Fla.
Levy, Bernard Lewis	2	IM	Atlanta
Lewis, Archie Robert	4	IM	Columbus
Lewis, Clifford DeVotie	4	E	Vidalia
Lewis, David Sloan, Jr.	3	AE	Columbia, S. C.
Lewis, Marion Thompson	1	IM	Columbus
Lewis, Robert Porcher	2	GE	Rockford, Ill.
Lewis, Thomas Morgan	4	A	Atlanta
Libbe, Herman Henry	2	E	Maryville, Mo.
Lindgren, Edgar Florentin, Jr.	1	En	Atlanta
Lindley, Sam Pierce	1	En	Smyrna
Lindsay, Carl Philip	3	IM	Atlanta
Lindsey, Waldo Wayne	2	M	Irwinton
Lindstedt, John August	1	Co	Hallandale, Fla.
Link, Chester Valentine	3	A	Chicago, Ill.
Link, Oren Raymond	4	CE	Chicago, Ill.

Linkous, Kenneth Terrell	1	Co	Flovilla
Livingston, Edward Ernest	2	CoCE	Milledgeville
Lloyd, Alva Aquilla	1	En	Atlanta
Lloyd, Ralph Webster	1	En	North Adams, Mass.
Lockery, James Edward	2	CoM	Central City, Ky.
Lockery, Lee David	2	CoM	Central City, Ky.
Lockhart, James Hamilton	1	En	Atlanta
Lockman, Chalmers David	1	En	West Palm Beach, Fla.
Lockman, William Stuart, III	2	ChE	West Palm Beach, Fla.
Loehr, Henry Turner	4	E	Atlanta
Lokey, Ben Frank	2	CoChE	Georgetown
Lombana, Louis Abel	2	M	Havana, Cuba
Lombardo, Charles Thomas	2	M	Westerly, R. I.
Long, Charles Riggs	4	IM	Jacksonville, Fla.
Long, William Francis	3	CoM	Camden, Ark.
Longino, Walter Bruce	1	En	Atlanta
Looney, John Joseph Williams, Jr.	1	En	Rocky Mount, N. C.
Lopez, Bennie Francis	4	ChE	Tampa, Fla.
Lopez, Frank Garcia	2	E	Isabel de Las Lajas, Cuba
Loret deMola, Melchor Alberto	2	M	Mirarmar, Havana, Cuba
Loveless, Howard Payne, Jr.	4	T	Atlanta
Lowe, William	1	En	Albany
Lowery, Andrew Armstrong	1	Co	Lineville, Ala.
Lowry, Willard Loren	sA		Ft. Worth, Texas
Luck, Davis Royall	4	CoCE	Atlanta
Luke, Chester Paul	1	En	Easthampton, Mass.
Lumsden, Walter Branham, Jr.	1	En	Nacoochee
Lunceford, Sigmon Austin	2	CoT	West Point
Lundy, Charles Raymond	3	IM	Boston
Lusk, Robert Edgar	1	Co	Mt. Pleasant, Tenn.
Lyle, Raymond Gault	2	M	Atlanta
Lynch, John Heery	1	Co	Atlanta
Lynn, Arthur Wayne	1	En	Marietta
Lynskey, James Edward	1	En	Atlanta

MacDonell, Alex Henry	2	M	St. Mary's
Macfarlane, George Fred	2	M	Great Kills, S. I., N. Y.
MacIntire, Bradford Brisbee	3	M	Perryman, Md.
MacIntosh, Lawrence Hudson	2	A	Newark, Del.
MacIntyre, Daniel Irwin	2	CE	Atlanta
MacKenzie, George Nelson, Jr.	2	CoE	Chattanooga, Tenn.
MacMorland, Edward Elloitt	1	En	Atlanta
MacQueen, Ewan Campbell	4	CoChE	Gates Mills, Ohio
Maddox, James Hunt	1	Co	Atlanta
Maddux, Theodore, Jr.	2	CE	Atlanta

Magester, Earl Henry	4	E	Waterbury, Conn.
Mahoney, William Cone, Jr.	2	M	Ft. Monroe, Va.
Malone, James Comer, Jr.	2	M	Atlanta
Malone, William Hale	4	Ch	Atlanta
Maloney, William Harwell	1	Co	Doraville
Malzone, Edward	4	CE	Brooklyn, N. Y.
Manetta, Charles Isadore, Jr.	1	En	Atlanta
Manetta, Edward Andred	5	CoE	Atlanta
Manley, Matthew Henry Hopkins	2	CoChE	Griffin
Manley, Theodore Manson	3	CoE	Griffin
Mann, Ivan Holder, Jr.	5	CoChE	Sylvester
Manning, Eugene Carr	4	CoE	Painted Post, N. Y.
Manry, Simmie Wilson	2	E	Edison
Manry, William Fillmore, III	2	M	Atlanta
Manus, Worth Franklin, Jr.	2	IM	Atlanta
Manzanilla, Jose Justo	1	En	Havana, Cuba
*Marchman, Henry, Jr.	1	En	Camilla
Maricich, John	1	En	Lackawanna, N. Y.
Marks, Joel Bernard	4	T	Augusta
Marks, Leonard Peter	1	En	Long Island City, N. Y.
Marquette, Julius William	3	CoM	Mexico, Mo.
Marshall, Hugh Key	5	A	Cordele
Marshall, Wirt Edwin	3	CoE	Rome
Marsteller, William Anderson	1	En	Portsmouth, Va.
Martin, Charles Norris, Jr.	2	IM	East Point
Martin, George Arthur	3	M	Sheffield, Ala.
*Martin, Laurence Freeman	2	CoE	Joplin, Mo.
Martin, Palmer Lee	4	AE	Atlanta
Martin, Roy Allan	1	Co	Cocoa, Fla.
Martin, Vurden Darnell	1	Co	Old Hickory, Tenn.
Martin, Walter Fisher	1	Co	Old Hickory, Tenn.
Martinson, Raymond Arvid	2	Co	North Port, N. Y.
Marvin, Kenneth Tackabury	1	Co	Sarasota, Fla.
Marx, Harry Manny	3	Ch	New York, N. Y.
Masingill, John Henry	2	CoM	Atlanta
Mason, Thomas Young	4	T	Rome
*Massey, Irvin McDowell	2	IM	Atlanta
Massey, Walter Mettauer, Jr.	4	IM	Macon
Mathew, Bernard Lilse	5	CoM	Ashburn
Mathews, Charlie Joe	3	E	Statesboro
*Mattingly, Edward Hagen	4	IM	Atlanta
Maxwell, Asmond Lenard, Jr.	2	CoE	Elberton
Maxwell, Hugh Francis	1	En	Memphis, Tenn.
May, Roby DeWitt	1	Co	Watauga Valley, Tenn.

Mayberry, James Anthony	1	En	Savannah
Mayer, Raymond Harry	3	E	Savannah
Mayfield, Allen Douglas	4	CoChE	Senath, Mo.
Maynard, William Pinckney	5	CoM	Waycross
Mayo, Charles Norris	2	IM	Waycross
*Mayo, Joseph Britton	2	IM	Portsmouth, Va.
*Mazotas, Leo Carl	1	En	Hartford, Conn.
McArthur, John William	2	ChE	Ailey
McAuliffe, Henry Eugene	1	Co	Atlanta
McBroom, James Houston, Jr.	1	En	Atlanta
McCallum, Robert Ernest	1	Co	Henderson, Tenn.
McCamy, Thomas Howard	2	IM	Lindale
McCartney, Albert Lewis	1	Co	Alabama City, Ala.
McCarty, Albert Francis	1	Co	St. Albans, N. Y.
McClain, John Nowlin	4	CoM	Spartanburg, S. C.
McClain, Richard Marvin	1	Co	Spartanburg, S. C.
*McClanahan, David Newton	1	En	Columbus, Miss.
McClearen, Donald Lyles	4	CoM	Nashville, Tenn.
McClintock, Ernest LeRoy	4	CoChE	Asheville, N. C.
*McClure, James Hulsey	4	IM	Union City
McClure, Milton Richard	4	IM	Atlanta
McCommon, Harold Lem	3	IM	Athens
McConnell, William Calvert	3	ChE	Akron, Ohio
McCord, Verna Lee	1	IM	McDonough
McCord, Walter Roberts	2	A	Atlanta
McDaniel, Edwin Dale	3	CoE	New Smyrna, Fla.
McDavitt, Thomas Ernest	1	En	Twin Falls, Idaho
McDonald, Hugh Dudley, Jr.	4	M	Waterville, N. C.
McDonald, Herron Martin	2	IM	Birmingham, Ala.
McDonald, Roy Almer, Jr.	1	En	Atlanta
*McDonough, John Wright	1	En	Dallas, Texas
McFarland, Sidney Lanier	4	CoCE	Louisville
*McGarity, Henry Clay	1	Co	Atlanta
McGarity, Marcus Harper	1	Co	Carrollton
McGaughey, Howell Mapp, Jr.	2	ChE	Atlanta
McGibony, William Noel	3	T	Greensboro
McGinney, Bryan Franklin	3	AE	Tyler, Texas
*McGough, Wilson Newton	2	GE	Texarkana, Ark.
McGowan, Robert Pennell	4	CE	Atlanta
McGrann, John Howard	3	CE	Perth Amboy, N. J.
McIntyre, John Franklin	1	En	Monticello
McKamy, Thomas Knox	1	Co	So. Pittsburgh, Tenn.
McKay, Edward Nixon	1	A	Rome
McKee, George Henry, Jr.	3	E	Atlanta
*McKenzie, Robert Alexander	4	A	West Palm Beach, Fla.

McKinney, George Elton	4	CoCE	Tampa, Fla
McKinney, Joseph Edward	3	IM	Atlanta
McKinnon, Charles Alexander	2	M	Atlanta
McLain, Warren Clifford, Jr.	1	En	Dacatur
McLain, William Richard	2	CoChE	Huntsville, Ala.
McLarty, William Jackson	3	IM	Atlanta
McLauchlin, Henry Hora, Jr.	3	M	Decatur
McLaughlin, James Bradley	4	M	College Park
McLean, Nat Graves	4	CoM	Memphis, Tenn
McLean, Olivette Colby	3	IM	Palmetto, Fla
McMahon, Edward Vincent	4	E	Atlanta
McRae, Donald Murdock	3	CoM	Douglas
McRae, Henry	1	Co	Woodbury
McWhorter, Hamilton	1	Co	Athens
McWilliams, William Reece	2	CoM	Dalton
Meeks, Jack Littleton	2	CoChE	Blairsville
Mehaffey, Marshall James	2	T	West Point
Meier, Paul Luther	1	En	Atlanta
Merrill, James Campbell, Jr.	2	M	Jacksonville, Fla.
Merritt, Warren George	1	En	Greensboro
Metcalf, David Carl	1	En	West Monroe, La.
Meyer, Lee Rothenberg	1	En	Meridian, Miss.
Michael, Roy Sherwood	2	T	Monroe
Middlecoff, Charnell Whitfield	1	Co	Memphis, Tenn.
Milian, Ruben Milian	3	A	Havana, Cuba
Millard, Spencer Edwards	1	En	Union City, Tenn.
Miller, Clyde Edward	4	CoE	Tampa, Fla.
Miller, David William	4	S	Saxton, Penna.
Miller, Eugene Kearfott, Jr.	3	M	Aliquippa, Penna.
Miller, Frank Alexander	1	Co	Atlanta
Miller, Frank DeLaFontaine, Jr.	2	IM	Atlanta
Miller, John Alexander	1	A	Atlanta
Miller, George Erikson	1	Co	Atlanta
Miller, Maurice Hill	2	ChE	Montezuma
Miller, Ray Arnold	1	IM	Atlanta
Miller, Sebastian Geisreiter	1	A	Atlanta
Miller, William Akins	4	CE	River Edge, N. J.
Miller, William Marion	3	IM	Cleburne, Tex.
Millican, Robert Morris, Jr.	2	ChE	Hapeville
Mills, Cooper Newton	4	M	Griffin
Mills, James Paul	5	CoT	Atlanta
Mills, Robert Alfred	5	CoChE	Mayfield Heights, Ohio
Mingledorff, Frank Crum	1	Co	Douglas
Mingledorff, George Henry, Jr.	2	E	Douglas
Miranne, Cheri Anthony	1	En	New Orleans, La.

Mitchell, Bryan Burdette	2	T	Decatur
Mitchell, Marvin George	4	CoCE	Quitman
Mitchell, Paul Jones	5	CoChE	Hampton
Mitchell, William Wilson	2	M	Macon
Mittelmark, Marvin Paul	1	En	New York City, N. Y.
Mixon, George Edward	2	CoChE	Ocilla
Mobley, Louis Robert	5	CoM	Atlanta
Mobley, Roy	2	ChE	Arcadia, Fla.
Monck, John George	1	En	Brooklyn, N. Y.
Moncrief, Lloyd Edwin	1	Co	Atlanta
Monk, Wayne Star	1	En	Atlanta
Montaldo, John Stanley	2	M	Ossining, N. Y.
Montgomery, Frank Rhodes	3	M	Orlando, Fla.
Montgomery, Spencer Virgil	4	E	Atlanta
Moody, William Franklin	1	Co	Little Rock, Ark.
Mooney, Jack Opal	2	CoCE	Atlanta
Moore, Charles Alexander, Jr.	4	E	Atlanta
Moore, Homer, Jr.	4	IM	Atlanta
Moore, Hugh Campbell	2	CoM	White Plains
Moore, James Pleasants	3	M	Muskogee, Okla.
Moore, Joe Riddell	1	Co	Atlanta
Moore, James William	1	En	Griffin
Moore, Oliver Pittman	1	En	LaGrange
Moore, Raymond Elmo	3	M	Atlanta
Moore, Robert Winborne	1	En	Atlanta
Moore, William Edwards, Jr.	4	IM	Hartford, Ark.
Moore, William Weatherly	3	IM	Buchanan
Morales, Luis Alberto	2	A	Havana, Cuba
Morelli, Eugene	3	M	Altoona, Pa.
Morgan, Albert Rufus, Jr.	3	CoCE	Columbia, S. C.
Morgan, Hubert Gordon	3	E	Atlanta
Morgan, James Perry	4	CE	White Plains, Mo.
Morgan, Joseph Warner	2	A	LaGrange
Morgan, Paul Woodrow	1	En	Buchanan
Morgan, Perry Wallace	1	Co	Douglas
Morris, Charles Mace	2	T	Marietta
Morris, Harold Palmer	2	IM	Decatur
Morrison, Jesse Lee	4	A	Atlanta
Morriss, Grover Wendell	3	CoT	Norcross
Morrow, Richard Edwin	1	Co	Savannah
Moss, Dan	4	CoT	Sugar Valley
Moss, Norman Woods	2	IM	Macon
Motlow, Jack Daniel, Jr.	2	CoC	Lynchburg, Tenn.
Mount, Eldridge Milford, Jr.	2	CoE	Statesboro
Mourning, Virgil Wesley	3	IM	Atlanta

Moye, Loraine Mickel, Jr.	4	S	Lorraine
Mozley, James Willis	1	En	Atlanta
Mullinnix, William Marbut	2	CoCE	St. Petersburg, Fla.
Mumma, Harlan Leslie, Jr.	1	IM	Brooklyn, N. Y.
Mumma, John Rathbone	1	IM	Brooklyn, N. Y.
Mundy, James Thomas	5	CoM	Atlanta
Munford, Dillard	3	M	Cartersville
Munn, Alto Reynolds, Jr.	4	IM	Atlanta
Munroe, Pat	3	IM	Quincy, Fla.
Munroe, William Bradley	2	M	Quincy, Fla.
Munson, Lloyd Emery	1	En	Miami, Fla.
Munt, George Newcomb, Jr.	1	En	Hopewell, Va.
Munter, Donald	2	M	Brooklyn, N. Y.
Muris, Hugo Luis	4	CE	Monterrey, N. L., Mexico
Murphey, Reid Stone	2	T	Chattanooga, Tenn.
Murphy, Brooks Berd, Jr.	1	En	Atlanta
Murphy, Charles Louis	1	En	Miami Beach, Fla.
Murphy, Fred Michael	2	T	Atlanta
Murphy, Robert Wiley	3	M	Jesup
Murray, Charles Taber, Jr.	1	Co	Columbia, S. C.
Murray, Gerard Eareckson	4	CoChE	Bessemer, Ala.
Murray, George Phillip, Jr.	2	E	Atlanta
Murray, Loren Purdy	1	Co	Waycross
Murray, Ronald McGregor	1	En	Columbus
Murrow, Samuel Joseph, Jr.	3	CoE	Savannah
Musgrave, William Jackson	3	CoChE	Lake Mary, Fla.
Myers, Charles Frederick	2	M	Rockledge, Fla.
Myers, Orie Eugene	1	En	Decatur
Myrick, Robert Lee	1	En	Macon
Nading, Alexander Montgomery	1	En	Winston-Salem, N. C.
Naegeli, Charles	2	GE	Maywood, N. J.
Naff, William Hardie	2	E	Atlanta
Nagai, Ken	4	CoM	Orange, Texas
Napier, Hendley Varner	1	En	Macon
Napier, John Blackman	4	Cer	Macon
Neal, Charles Minchin	3	M	Columbus
Neal, Harry Bush	3	M	Augusta
Nechemias, Herbert Bernard	4	E	St. Joseph, Mo.
Neely, Lester Marlin, Jr.	2	E	Marion, Ala.
Neely, Lindsay Miner	2	E	College Park
Neisius, Wliliam Vincent	3	CoChE	Atlanta
Nelson, Harry Burton	3	IM	Atlanta
Nelson, Richard Marion	2	Ch	Atlanta
Nesbitt, Rudolph Hensoldt, Jr.	2	M	East Point

Netherland, William Louis	4	IM	Atlanta
Nettles, Jack Edward	2	CE	Atlanta
Neves, John Richard, Jr.	4	IM	Ft. Gaines
Newborg, David Sidney	1	En	New York City, N. Y.
Newell, Robert Olin	1	IM	Atlanta
Newman, James Gardner	1	En	LaGrange
Newton, Steve Judson	5	CoM	Sylvania
Nicholson, Frank William	3	IM	Atlanta
Nickell, Donald Holt	1	En	Ft. Myers, Fla.
Nickell, Don Jarrett	2	E	Lewisburg, W. Va.
Nisbet, John LaWall	1	En	Winston-Salem, N. C.
Nixon, Jack Uhl	4	CE	Savannah
Nolan, Hubert Lester	3	CoM	Rockmart
Norman, Richard Marks	2	M	Columbus
Nort, Fred A.	1	En	Atlanta
North, Donald Christopher, Jr.	2	CE	Clearwater, Fla.
Northen, Will Clifton	5	CoE	Little Rock, Ark.
Northup, William Hazard	1	En	Pensacola, Fla.
Norton, John Vincent	3	AE	Savannah
Nourse, Dean Wood	1	Co	Seminole, Okla.
Nowell, Dorroh Lee, Jr.	3	Cer	Augusta
Nunes, Joseph Leon	2	Cer	Atlanta
Nunnelee, Walter Irby	3	ChE	Atlanta
Nurko, Paul Sylvester	3	M	Robbinsville, N. J.
O'Brian, Dennis Duke	4	AE	Doerun
OBrien, Harry Richard	4	GE	Savannah
O'Callahan, Leland, Jr.	1	En	Atlanta
O'Donnell, William Joseph	1	Co	Nashville, Tenn.
O'Driscoll, William Cyril, Jr.	2	E	Charleston, S. C.
Oglesby, Henry Rubey, Jr.	4	CE	Warrensburg, Mo.
Oglesby, Redding Garrett	1	Co	Miami, Fla.
O'Hara, Brooks	3	E	Cedartown
O'Keefe, Frank Lewis	2	A	Atlanta
Olive, Dixon Raines	1	En	Talbotton
Oliver, Edward Purse	1	En	Atlanta
Oliver, Thad Sam, Jr.	4	CoM	Atlanta
O'Neal, Bruce	1	En	Huntsville, Ala.
Oquendo, Raul Augusto	2	M	Sitiecito, Sta. Clara, Cuba
Orear, Edward Reid	4	E	Kansas City, Mo.
Ormond, Alexander Clark	2	M	Savannah
Orr, George Edward	1	Co	Chattanooga, Tenn.
Orrin, Robert Carlton	2	Cer	Palatka, Fla.
Osborne, Frank Stone, Jr.	4	CoChE	Columbia, Tenn.
O'Shea, Cornelius Francis	3	M	Atlanta

Osmalov, Robert	3	ChE	Richmond, Va.
Oster, Robert Howard	3	CoM	Swissvale, Penna.
Ostrom, Charles Theodore	1	En	Garden City, N. Y.
Otey, Walter Madison, Jr.	1	A	Talladega, Ala.
Otey, Wilbur Rush, Jr.	4	CoT	Marfrance, W. Va.
O'Toole, Robert, Jr.	3	E	Deland, Fla.
Overstreet, Robert Samuel	2	CoM	Savannah
Owaroff, George Michael	1	En	New London, Conn.
Owen, Steve Clements	1	Co	Woodbury
Owens, George Emmett	1	En	Wilbraham, Mass.
Owens, Robert Rolfe	2	CE	Wilbraham, Mass.
Owens, William Bruckner	3	CoM	Decatur
Pace, Ashley DeWitte, Jr.	1	En	Pensacola, Fla.
Pace, John Smith, Jr.	3	CE	Mobile, Ala.
Pace, William Wilkinson	2	IM	Albany
Padgett, John Willard	2	ChE	Jackson Heights, L. I., N. Y.
Padgett, Sam Finley	2	CE	Atlanta
Pafford, Jeff Wilcox, Jr.	2	ChE	Newington, Conn.
Page, Junius Allison	2	IM	Raleigh, N. C.
Page, Jack Clifford	1	En	Macon
Pagelson, Edward	1	En	Panama City, Fla.
Painter, William Calvin, Jr.	4	IM	Atlanta
Palmer, Byron Herbert, Jr.	1	En	Atlanta
Palmer, Robert Brown	1	En	Maplewood, N. J.
Palmer, Wallace Walter	1	En	Atlanta
Parham, Joseph Swanson	1	A	Greenville
Parham, Troy Hilliard, Jr.	2	CoChE	West Asheville, N. C.
Paris, Walter Edwin	3	CE	Atlanta
Parker, Albert Sidney	1	A	Millen
Parker, Fred Lee	2	CoCE	Cedartown
Parker, James Frederick	4	AE	Gulfport, Miss.
Parks, Edward Schley	1	En	Atlanta
Parks, Oattis Elwyn	2	GE	Atlanta
Parks, William Allen	1	En	Atlanta
Parnelle, Francis Wallis	2	M	Savannah
Parrish, Audey William	4	E	Nashville, Tenn.
Parrish, Charles Raymond, Jr.	4	CE	Atlanta
Parrish, Henry Parker	1	Co	Pavo
Parrish, Robert Lee	5	CoChE	Biltimore, N. C.
Pate, Jason Thomas	3	IM	Macon
Pate, Sam Gordon, Jr.	1	En	Macon
Patten, Allen Judy	3	CoE	Newbern, N. C.
Patterson, Hubert	1	Co	Ensley, Ala.

Patton, Charles Otis, Jr.	3	E	Rock Hill, S. C.
Patton, Edward Lapsley, Jr.	4	ChE	Jackson Heights, L. I., N. Y.
Paulk, Willis Dorminey	4	IM	Fitzgerald
Paxton, Roy Singleton	4	CoE	Atlanta
Paxton, William Hamilton, Jr.	4	AE	Atlanta
Payne, Howard Bozzer	1	A	Elberton
Peacock, Benjamin Bugg	Sp		Atlanta
Peacock, Cassius Lee	1	Co	Atlanta
Peacock, Glen Fortson	1	Co	Columbus
Peacock, Lamar	1	En	Albany
Pearce, Jack Brewster	3	IM	Atlanta
Pearl, Harry Edward	4	CoCE	Balboa, Canal Zone
Pearlman, William Julian	1	IM	Valdosta
Pearson, Edwin Johnson	3	CoE	Atlanta
Pease, Charles Ralph	5	CoT	Cohutta
Peavy, Glen Henry	4	CoCE	Byron
Peavy, William Austin	5	CoChE	Byron
Peek, Gordon Grigsby	2	E	Savannah
Peeples, Ben	2	GE	Kirkwood, Mo.
Peeples, John Randolph	1	Co	Estill, S. C.
Peffall, George Snell, Jr.	4	ChE	Westmont, N. J.
Pena, Carlos Ernesto	1	En	Oriente, Cuba
Pendell, Robert Sterling	1	A	Atlanta
Pendell, Vernon Phillip	1	En	Atlanta
Pendergrast, John Brittain, Jr.	4	T	Atlanta
Penn, William Richard	4	ChE	Rome
Penney, Walter Marvin	1	Co	Marietta
Pennington, Carl Edward, Jr.	2	IM	Decatur
Perez, Raymond Douglas	1	En	Pierce, Fla.
Perkerson, Louie Neil	1	IM	Atlanta
Perkins, Mark Edward	1	A	Millen
Perkinson, Robert Jelene	1	En	Pleasantville, N. Y.
Pernell, Robert Edgar	1	En	Columbia, S. C.
Perritt, William Otho, Jr.	1	En	Florence, Ala.
Perry, Charles Gordon, Jr.	1	En	Chattanooga, Tenn.
Perry, Charles Stuart, Jr.	4	CoE	Winder
Perry, Howard Raymond	3	CoE	Arlington
Perry, Joe Samples	1	Co	Moultrie
Person, Charles Edwin, Jr.	3	CoM	Atlanta
Peters, Frank Laurence	3	CE	New York City, N. Y.
Petree, Billy Heaton	2	IM	Atlanta
Petrey, Roger Aulis	2	CoCE	Haines City, Fla.
Petry, Luther Benjamin	3	CoChE	Atlanta
Petty, Carol Douglas	2	A	Dawson
Petty, William Crittenden, Jr.	1	Co	Ashland, Ky.

Petway, William Ernest	2	M	Atlanta
Pfeifer, John Leo	1	En	Little Rock, Ark.
Pharr, Robert Herd	3	T	Washington
Phillips, Edward LeMoine	1	En	Corning, N. Y.
Phillips, Frederick Funston	3	T	Siluria, Ala.
Phillips, George William	2	ChE	Woodward, Ala.
Phillips, Jack Beverley	1	IM	Atlanta
Phillips, James Hamilton	3	E	Wattsville, Ala.
Phillips, James Louis	1	En	Birmingham, Ala.
Phillips, Sam Russell	5	CoT	College Park
Philpot, Eugene Mason, Jr.	3	M	Galveston, Texas
Piazza, John Peter	1	Co	Arlington, N. J.
Picco, John Francis	2	CE	Brooklyn, N. Y.
Picozzi, Gabriel James	1	En	Summit, N. J.
Pieper, Edward Miller	1	En	St. Louis, Mo.
Pierce, James Elmer	4	CE	Kirkwood, Mo.
Pike, Clinton Badger, Jr.	5	CoM	Birmingham, Ala.
Pike, Charles William	4	CoChE	Birmingham, Ala.
Pines, James Howard	4	M	Salem, Mo.
Pinson, William Hammet	1	En	Atlanta
Piper, James Richard	1	En	Hartford, Conn.
Pippen, Tom Sykes	2	IM	Ensley, Ala.
Pirog, Eugene Leonard	1	En	Greenfield, Mass.
Pitman, Eddie Hewlette	3	IM	Atlanta
Platt, James Conrad, Jr.	4	T	Gainesville
Plaxico, Monroe Livingston	1	En	Atlanta
Plummer, Howard Bernard	4	CoE	Miami, Fla.
Poe, Edgar Allan	4	E	Newellton, La.
Poer, Lee Scott	4	T	Atlanta
Ponce, Sergio Pedro	1	En	Miami, Fla.
Ponce de Leon, Rafael A. Poveda	3	M	Central Perseverancia, Cuba
Ponder, Charles Henderson	1	En	Griffin
Ponder, Paul Holloway, Jr.	1	En	Madison
Poor, Albert Franklin, Jr.	3	CoM	Woodstock
Pope, Arthur Gray	4	ChE	Atlanta
Pope, Alan Yates	G-AE		Atlanta
Pope, William Merritt	3	E	St. Andrews, Fla.
Porter, Howard Eugene	3	CoCE	Chesterfield, S. C.
Post, Madison	4	CoM	Tampa
Potter, Ben John	1	En	Atlanta
Potter, Paul Merrick, Jr.	3	Cer	Atlanta
Pottinger, Charles Theodore	1	IM	Atlanta
Powell, Earl Alexander, Jr.	3	M	Rockmart
Powell, Frederick Hinton, Jr.	2	IM	Richmond, Va.
Powell, William Evans	2	E	Atlanta

Power, Charles Henry	1	Co	Elberton
Prahl, Glenn Emery	4	CoE	Jasper, Ala.
Prendergast, Earle Wynton	2	E	Atlanta
Press, Joe Bailey	3	ChE	Chattanooga, Tenn.
Prewett Clinton Roosevelt	1	Co	Dallas
Price, Herbert Hickham	1	En	Ft. McPherson
Price, Oscar Monford, Jr.	1	En	Birmingham, Ala.
Prichard, James Harold	2	CoCE	Canton
Pries, Ralph William	2	M	Atlanta
Primm, John Kenton	2	E	Atlanta
Pritchard, Raymond Ralston	1	En	Atlanta
Proctor, Donald Johnston	2	GE	Atlanta
Pryor, Shepherd Green	2	CoE	Fitzgerald
Puckett, Franklin Camp	1	Co	Forest Park
Puckett, James Frank	1	Co	Atlanta
Puig, Rafael Antonio	2	M	Havana, Cuba
Pulignano, Nicholas Vincent	3	AE	Long Branch, N. J.
Pundick, Boris	1	En	Brooklyn, N. Y.
Quillian, Hugarwyn	1	Co	Daytona Beach, Fla.
Quillian, James Wylie	1	Co	Daytona Beach, Fla.
Racey, Ralph Ernest	2	M	Atlanta
Rachlin, Albert Israel	G-Ch		Fall River, Mass.
Raettig, Alvin Ernest	2	M	Decatur
Ragsdale, Harry Wilkerson	1	En	Atlanta
Raine, Thomas Willan	1	En	Alderson, W. Va.
Raines, Lewis Donald	1	A	Louisville
Raines, Langdon Howard	3	CoChE	Ashburn
Rainey, Hiram Watson, Jr.	3	CE	Decatur
Ramirez, Jose Guillermo	2	M	Havana, Cuba
Ramseur, Vardry Dixon, Jr.	3	M	Greenville, S. C.
Rankine, Christopher Allen Nisbet	1	En	Rahway, N. J.
Rapier, Pascal Moran	4	CoChE	Atlanta
Ravenel, Bruce Walker, Jr.	2	CoE	Columbia, S. C.
Ray, George DeLorian, Jr.	4	T	Atlanta
Rayle, Roy Edgar	5	CoM	Eastover, S. C.
Rea, Lathan Walker	2	E	Charlotte, N. C.
Read, Chase Broadwater, Jr.	1	Co	Atlanta
Redd, James Thomas	G-Ch		Beaver Dam, Va.
Redmond, Paul A., Jr.	4	T	Birmingham, Ala.
Redwine, Bradley Lewis	1	En	Atlanta
Reed, Alfred Clare, Jr.	3	M	Port Orange, Fla.
Reed, Clifford Eugene, Jr.	1	En	Swainsboro
Reed, William Bruce	3	IM	Clearwater, Fla.

Rees, Ernest, Jr.	4	T	Fayetteville, Tenn.
Reeve, Charles Phillip	1	En	Calhoun
Reid, John Andrew	1	En	East Point
Reily, Raymond Leon	2	IM	Atlanta
Reinert, John Carl	1	Co	Memphis, Tenn.
Reisman, Carl	1	IM	Atlanta
Reiss, William Henry	1	En	Mt. Kisco, N. Y.
Renfroe, Clement Hugh	4	IM	St. Augustine, Fla.
Reynolds, Paul, Jr.	3	IM	Savannah
Reynolds, William Herbert	4	E	Jacksonville, Fla.
Rhyne, Jeff Smith	4	E	Marianna, Fla.
Rhyne, Paul Conrad, Jr.	2	A	Lincolnton, N. C.
Rhyne, William Alexander	1	En	Marianna, Fla.
Ribble, George William	1	Co	Atlanta
Richards, Charles Philip	2	IM	Atlanta
Richardson, Alonzo	3	M	College Park
Richardson, John Tal	4	CoM	Honey Grove, Texas
Richardson, William George	1	En	San Juan, Puerto Rico
Richardson, William Howard	2	CoE	Fitzgerald
Richmond, James Kenneth	1	Co	Atlanta
Rickett, George Taliaferro	3	IM	Atlanta
Rickett, Joseph Williamson	4	IM	Atlanta
Ricks, Thomas Jesse	2	CoE	Guyton
Ridings, Domer Frederick	3	IM	Kingsport, Tenn.
Ridley, Robert Lee	3	IM	Atlanta
Rimmer, James Stephen	G-CE		University Park, Md.
Rimmer, Walter	3	IM	Pawtucket, R. I.
Ripley, Francis Martin	2	IM	Atlanta
Rippberger, Charles Christy	3	ChE	Seabring, Fla.
Ris, Charles Harrington, Jr.	G-AE		Atlanta
Rivers, William Jacocks	1	Co	Albany
Roach, Alfred Ralph	3	IM	Atlanta
Roach, Charles Stowers	3	E	Atlanta
Roane, George Douglas	2	T	Atlanta
Robbins, Homer Erwin	2	CoM	Atlanta
Roberts, Ether Paul, Jr.	1	Co	Atlanta
Roberts, Lloyd Stanley	1	En	Brunswick
Roberts, Richard Earnhardt	3	AE	New Smyrna, Fla.
Roberts, Robert Harmon	2	CoChE	Alexandria, Va.
Roberts, Sam Andrew	4	T	Decatur
Roberts, Samuel Noble, Jr.	4	M	Atlanta
Robertson, Frederick Saunders	1	En	Finchville, Ky.
Robertson, Horace Luke	1	En	Atlanta
Robertson, Samuel Graham, Jr.	3	E	Dickson, Tenn.
Robeson, Carl Washington, Jr.	4	M	Savannah

Rocamora, Leon David	1	Co	Asheville, N. C.
Rodier, Martin William, Jr.	1	En	Atlanta
Rodriguez-Jorge, Orlando Andres	3	E	Havana, Cuba
Roesel, Albert Julius	4	E	Augusta
Roessler, Carl Adams	1	Co	Atlanta
Rogers, Charles Carl, Jr.	4	CoChE	Morrow
Rogers, John Theron, Jr.	1	Co	Eastman
Rommel, William Houghton	1	A	Louisville, Ky.
Roper, Grady Wayne	1	Co	Albany
Rose, Alfred William	3	IM	Binghamton, N. Y.
Rosenberg, Leon Joseph	3	IM	Atlanta
Ross, Raymond William, Jr.	2	M	Atlanta
Rossow, Alfred George	3	Ch	No. Tonawanda, N. Y.
Rountree, Walter Jefferson	3	T	Decatur
Rowland, Charles Greenleaf	1	En	Savannah
Rowland, Fred Veal	1	En	Cawood, Ky.
Rowland, Whitney Clayton	1	En	Tyler, Texas
Roy, John Curtis	2	E	Charleston, W. Va.
Ruhe, Robert Victor	1	En	Chicago Heights, Ill.
Rule, Shelley Elmer	3	CoM	Chattanooga, Tenn.
Ruse, Charles Kenneth	2	T	Atlanta
Rush, Lee, Jr.	4	CoChE	Jackson, Tenn.
Russell, Alden Chester, Jr.	3	IM	White Plains, N. Y.
Russell, Downes Lyle, Jr.	3	M	So. Norwalk, Conn.
Russo, Joseph John	2	Cer	Lynbrook, N. J.
Ryan, Forrest Pat	2	A	Atlanta
Ryan, John Stephen	2	ChE	Delavan, Ill.
Ryscuck, John	4	CoE	Camden, N. J.
Saeman, Walter Carl George	3	CoChE	Norlina, N. C.
Saffir, Herbert Seymour	2	CE	New York City, N. Y.
Saffold, Thomas Franklin	2	CoE	Atlanta
Salcedo, Armando Antonio	3	E	Havana, Cuba
Salters, Leland Blackwood, Jr.	G-M		Florence, S. C.
Samford, Charles Edward	4	CE	Atlanta
Saminsky, Herman	3-M		Savannah
Samoden, Edward Walter	3	CoChE	West Haven, Conn.
Sampson, Nicholas James	3	CoChE	Atlanta
Sams, William Taylor	2	CoE	Atlanta
Sanders, Donald William	2	ChE	Bessemer, Ala.
Sanders, John Whittier, Jr.	G-Ch		Kline, S. C.
Sanders, Neal Herbert	4	M	East Point
Sanderson, William Robert	1	En	Atlanta
Sands, Jack Edwin	1	Co	Columbus
Sawyer, Claude Robert	2	M	Rochester, N. Y.

Sawyer, Stephen Alexander	1	Co	Anniston, Ala.
Sayre, Frank Anderson, Jr.	3	M	Galveston, Texas
*Scanling, Edward LeRoy	2	ChE	Atlanta
Scarborough, Dan Hamilton	1	En	Atlanta
Scarborough, Sterling Calvin	2	ChE	Hamlet, N. C.
Scarvelis, Gus Steve	1	En	Atlanta
Scavens, Mitchell John	3	Cer	Augusta
Schenck, Curran Jolly	3	M	Savannah
*Schenck, Eugene Lewis, Jr.	1	Co	College Park
Schlapfer, Louie Albert, Jr.	3	ChE	Caldwell, N. J.
Schlesinger, Clyde Page	1	Co	Chattanooga, Tenn.
*Schmitter, Bernard Milard	2	CoCE	Grantwood, N. J.
*Schork, Ernest Leonard	1	En	Maplewood, N. J.
Schotanus, William Mitchell	2	M	Atlanta
Schott, Jack Benedict	1	IM	Maplewood, N. J.
*Schottler, George Henry	1	En	Baltimore, Md.
Schreeder, Charles Lane, Jr.	4	M	Atlanta
Schreeder, John Marvel	2	ChE	Atlanta
Schreeder, William Blauvelt	2	ChE	Atlanta
Schroder, Frederick Eugene	2	T	Greenville, S. C.
Schroeder, Herman H.	3	Ch	Atlanta
Schull, Lawrence Grady	1	En	Tullahoma, Tenn.
*Schulze, Robert Allison	1	En	Atlanta
Schwarz, William Bell	1	En	Bronxville, N. Y.
Scoggin, James Arthur	4	M	Rockmart
Sconyers, Chester Carl	1	En	Malden, Mo.
*Sconyers, Junius Walbert	2	GE	Malden, Mo.
Scott, Frederick William Elmer	4	M	Atlanta
Scott, John Earle, Jr.	1	En	Atlanta
Scott, James Franklin	1	En	Atlanta
Scott, Owen Oliver	2	T	Union Point
Scruggs, John Franklin	2	Cer	Valdosta
Seale, William Bradley	2	ChE	Atlanta
Sears, William Beeks	3	T	Atlanta
Seay, Robert Leon, III	3	CE	Birmingham, Ala.
Secord, Roy	5	CoE	Jacksonville, Fla.
Secord, William Paul	4	AE	Atlanta
See, Samuel David	3	CoE	Louisa, Ky.
Seelig, Herman S.	G-Ch		Fayetteville, Ark
Segall, Bernard E.	2	M	Shreveport, La.
Segrera, Pedro Enrique	2	Ch	Havana, Cuba
Seifert, Raymond August	sIM		Rockville, Conn.
*Seiferth, Ralph Werner	1	En	West New York, N. J.
Seleskey, Weldon Bridge	1	IM	Atlanta
Sena, John Michael	2	E	Hartford, Conn.

Sessoms, Frank Sirmans	3	CoM	Cogdell
Sewell, Rency Floyd	3	E	Atlanta
Seydel, Paul Vasser	G-Ch		Atlanta
Shackelford, Francis Lee, Jr.	4	ChE	Greenville, S. C.
*Shafer, John Daniel	3	A	Roanoke, Va.
Shamhart, Wilmer Harry, Jr.	2	ChE	Rockwood, Tenn.
Shannon, Henry Griggs	1	Co	Savannah
Shannon, William Duncan	1	Co	Savannah
Sharp, James Hervey	1	Co	Fitzgerald
Shantzen, Maxwell Louis, Jr.	1	En	Atlanta
Shaw, Gene	2	GE	Ft. Worth, Texas
Shearouse, Lee Alan	2	Cer	Savannah
Sheffield, Walter Harris	1	En	College Park
Shek, William Finn	1	En	Inwood, N. Y.
Sharp, James Harvey	4	CE	Gretna, Va.
*Shelor, Charles Thomas	4	IM	Atlanta
*Shepherd, George Robert	1	Co	Hollywood, Fla.
*Shepherd, John Wiley, Jr.	5	CoE	Maysville
Sheram, Frank Louis	1	Co	College Park
Sherertz, Herbert Jackson	2	IM	Roanoke, Va.
Sherrill, William Gachet	1	Co	West Point
Sherrod, Charles Anthony	1	Co	Covington, Tenn.
Shillito, Robert Montague	2	CoChE	Birmingham, Ala.
Shipley, Reed Edwin	1	En	Atlanta
*Shipley, Vernon McCoy	1	A	Savannah
*Shipman, William Len	2	CoM	Dyersburg, Tenn.
Shipp, John Edgar	4	M	Americus
Shoemaker, Charles Reiff, III	3	CE	Philadelphia, Penna.
Shoemaker, Frank Ogle, Jr.	2	ChE	Chicago, Ill.
Shoop, Robert Alan	3	CoE	Birmingham, Ala.
*Short, Frederick Raymond	4	CoM	Tampa, Fla.
Shuff, John Winfred, Jr.	1	En	Ensley, Ala.
*Shuman, William Joseph	3	M	Macon
Shutze, Ed Browning	2	E	Avondale Estates
Shutze, Tom Erwin, Jr.	2	E	Avondale Estates
Sibley, Hubert Oscar	1	IM	Atlanta
Sieg, LeRoy Olcott	sIM		Atlanta
Siegel, Milton Raymond	4	CoChE	Decatur
Siegelstein, Maxwell James	1	IM	Atlanta
Silberman, Morris	4	M	Baltimore, Md.
Silva, George Pedro	4	CE	Cardenas, Cuba
Silver, David	4	T	Augusta
Silver, Louis	3	ChE	Atlanta
Silver, Sidney	1	En	Atlanta
Simmons, Oliver Walton	2	Ch	East Point

Simms, James Ward	3	A	Atlanta
Simons, Taveau Mitchell, Jr.	sCer		Atlanta
Simpson, Stanley Norfolk	1	A	Atlanta
Sims, Thomas Fletcher, Jr.	4	IM	Chattanooga, Tenn.
Sims, William Edward	3	E	College Park
Sims, William Howard	1	En	St. Louis, Mo.
Singer, Paris George	1	En	Columbus
Singleton, William Brightman	4	A	Rocky Mount, N. C.
Sinica, John, Jr.	1	En	Red Bank, N. J.
Skalwold, Robert Norman	2	CoM	Plainfield, N. J.
Skundale, Frank James	3	CE	Atlanta
Slade, Frank Edward	1	Co	Marshallville
Slaten, Eugene Branson	4	IM	Atlanta
Slicer, Joseph Samuel, Jr.	3	E	Atlanta
Slikas, Charles Anthony	1	En	Brooklyn, N. Y.
Slye, Richard Paul	1	En	Charlotte, N. C.
Small, Artie Harcourt	2	IM	Atlanta
Smith, Alexius Guy, Jr.	2	CoM	Macon
Smith, Anderson Quillian	2	CoCE	Barnesville
Smith, Bert	3	CE	Atlanta
Smith, Charles Clifton	4	CoE	Shelbyville, Tenn.
Smith, Eugene Alvan	1	Co	East Point
Smith, Emanuel Harold	4	CoM	Bayonne, N. J.
Smith, Edward Willingham	3	IM	Rome
Smith, Fred Warren	5	CoE	Waycross
Smith, George Boone	3	IM	Macon
Smith, George Elliott	3	AE	West Palm Beach, Fla.
Smith, Houston Dixon, Jr.	2	T	Columbus
Smith, Hollis King	1	En	Thomaston
Smith, Harry Vaden	2	E	Boca Grande, Fla.
Smith, Jack Gillespie	3	CoE	Haines City, Fla.
Smith, James Pendergrast	2	CoE	Savannah
Smith, John Strother	3	CoChE	Marietta
Smith, Monroe Jerome	1	En	Brookline, Mass.
Smith, Marion Kiser	3	M	Union City
Smith, Ralph Arnold	4	ChE	Jefferson
Smith, Roy Fowler	2	CE	Talbotton
Smith, Robert James	4	T	Atlanta
Smith, Raymond Wilson	2	GE	Rock Hill, S. C.
Smith, Sidney Rousseau	3	E	Savannah
Smith, Sidney T.	3	E	Montezuma
Smith, Thomas David	1	En	Atlanta
Smith, Truman Gilbert	1	En	Hartford, Conn.
Smith, William Clair	1	En	Newnan
Smith, Wesley Vernon, Jr.	4	CE	Hamlet, N. C.

Smithson, James Willoughby	4	IM	Chicago, Ill.
Smoyer, Howard Walter	G-Ch		St. Petersburg, Fla.
Snellgrove, William Arthur, Jr.	5	CoM	Swainsboro
Snelling, Rollins Campbell	1	Co	Albany
Snipes, Marvin Beutell	3	E	Atlanta
Snooks, Bartow Randolph	2	GE	Ailey
Snuggs, William Carl	2	E	Columbus
Snyder, John Franklin	1	Co	Jacksonville, Fla.
Sobredo, Sergio Antonio	3	E	Havana, Cuba
Solberger, Sam, Jr.	5	CoChE	Slidell, La.
Solomon, English	4	M	Macon
Solomon, Israel	2	CoChE	Camden, Ark.
Solomon, William Griffin	1	En	Macon
Spangler, Howard Edmund	3	CoChE	St. Petersburg, Fla.
Speck, Jefferson Woodrow	4	M	Bayou, Ark.
Spell, William Arthur	2	T	Atlanta
Spence, Robert Morrelle	1	Co	Macon
Spencer, James Grafton	4	E	Palatka, Fla.
Sperry, William Charles	3	CoCE	Jersey City, N. J.
Spivey, Edwin Holland	1	Co	Metter
Spratlin, Herbert Dean	3	M	Atlanta
Sprayberry, James Paul	1	IM	Jacksonville, Ala.
Spreen, Allan Raymon	4	M	Nutley, N. J.
Spring, George Nichols, Jr.	4	ChE	Atlanta
Spurlock, Benjamin Hill, Jr.	4	GE	Atlanta
Stakely, Alpheus Henry	1	En	College Park
Stalker, Ian Fraser	3	IM	Atlanta
Stall, Robert Jennings, Jr.	2	CoM	Savannah
Stanton, Isaac Anderson, III	3	AE	Social Circle
Staples, Charles Albert	4	M	Decatur
Stapleton, Cade Alford	4	M	Decatur
Stapleton, Christian William	1	En	Glen Ridge, N. J.
Stapleton, James Alford	3	T	Decatur
Stapleton, Lynwood Alford	4	M	Decatur
Starr, Jacob Marvin, Jr.	1	En	Newnan
Starr, William Frank	2	GE	Peoria, Ill.
Staton, Albert Hammond	1	En	Atlanta
Stauverman, Edward, Jr.	4	M	Atlanta
Stefansin, Stephen	1	Co	West New York, N. J.
Steimer, Theodore George	1	En	New York City, N. Y.
Stein, Lloyd Everett	4	E	Holyoke, Mass.
Stein, Morris	1	En	Mt. Pleasant, Tenn.
Stensland, Joseph O.	3	ChE	Madison, S. D.
Stephens, Albert Thomas	1	En	Atlanta
Stephens, Lloyd Howard	2	CoChE	Lyman, S. C.

Stephenson, Charles Nevin	1	En	Victoria, Va.
Stevens, William Ross, Jr.	4	CoChE	Old Hickory, Tenn.
Stevenson, DeWitt Alexander	4	CE	Memphis, Tenn.
Stewart, Edwin Haliburton, Jr.	2	M	Jacksonville, Fla.
Stewart, George Howard	1	En	Cedartown
Stewart, Hunter Williamson	1	En	Atlanta
Stewart, Ralph Stephens	2	ChE	Atlanta
Stickles, Rowland Davenport	2	ChE	Cornwall-on-Hudson, N. Y.
Stokey, William Farmer	4	M	Atlanta
Stone, Joel Franklin	3	IM	Atlanta
Storer, Stacy Steward	3	CoM	Douglasville
Story, William Gaumer	1	En	Woodbury, N. J.
Stovall, James Frank	1	En	Madison
Straley, Roy John	2	CE	Buffalo, N. Y.
Strange, William Franklin	1	Co	Rockmart
Strate, Frank Russell	3	E	Keokuk, Iowa
Strickland, Aubrey	2	CoChE	Atlanta
Strickland, Fred Eager, Jr.	2	AE	Donalsonville
Strickland, Henry Richard	2	M	Concord
Strickland, Harold Winton	5	CoCE	Glenville
Strickland, Roy Evans, Jr.	2	E	Atlanta
Strickland, Thomas Dennis, Jr.	4	E	Atlanta
Strong, Ernest Boynton	1	En	Marietta
Stroud, William Douglas	3	E	Chaffey, Mo.
Stuart, Willard Thomas	2	M	Groton, Conn.
Stubbins, Joseph Briggs	2	E	Birmingham, Ala.
Stulb, Henry Lowrey	5	A	Augusta
Stuntz, Robert Paul	2	M	Bartletsville, Okla.
Sturgis, John Robert	2	ChE	Atlanta
Sturgis, Murrah	1	En	Philadelphia, Penna.
Sturman, Brian Jaye, Jr.	1	En	Atlanta
Sullivan, Joseph Floyd	1	En	Vine Grove, Ky.
Sullivan, Wilbert Lawrence	2	CoE	Atlanta
Sulzbacher, Joel, Jr.	3	M	Rome
Sutherland, Trosie Judy	2	M	Atlanta
Sutton, Edward Boyd	3	T	Decatur
Sutton, George Mack, Jr.	3	CoE	Tifton
Sutton, Merrell Carl	2	CoM	Fitzgerald
Sutton, Shelton Beverly	1	En	Vidalia
Swan, Arthur Gordon	4	CoE	Tenafly, N. J.
Swartz, Martin	2	M	Greenville, N. C.
Swint, John Albert	4	CoM	Orchard Hill
Swint, James Brandon	1	Co	Chipley
Symms, Ernest Lucian, Jr.	4	AE	Asheville, N. C.

Taaffe, John Laurence	2	E	Leesburg, Fla.
Tabachnick, Herman Solomon	1	En	Camden, N. J.
Taft, Howard Mason	1	En	Atlanta
Talley, Thomas Pound	2	GE	Smyrna
Tamm, John Robert	1	En	Rome
Tanner, Ralph Marshall	2	ChE	Atlanta
Tanner, William Harry	3	M	Jonesboro
Tarver, Russell Irwin	1	Co	Lookout Mt., Tenn,
Tate, Roscoe Charles	1	Co	Broxton
Taylor, Dillard	1	IM	Newnan
Taylor, Grover Carlyle	1	Co	Rocky Mount, N. C.
Taylor, George Robert Ian	1	En	Central Miranda, Oriente, Cuba
Taylor, James Curry	1	Co	Winchester, Tenn.
Taylor, Laurent LaRoche	1	En	Cocoa, Fla.
Taylor, Marion Fletcher	1	Co	West Point, Miss.
Taylor, Walter Eugene	1	En	Cuthbert
Teaford, James Ed	3	IM	Osceola, Ark.
Teague, Jo Morgan, Jr.	3	Cer	Atlanta
Teague, William Benjamin	1	En	Atlanta
Teasley, Joel Hunt	2	M	Macon
Teat, James Ira	3	CoT	Athens
Temple, Lincoln Boyce	2	M	Newport, Ark.
Tennison, James Daniel, Jr.	3	IM	Texarkana, Ark.
Thames, Walter Hendrix, Jr.	2	ChE	Thomasville
Thawley, Irving William	1	En	Atlanta
Thomas, Cornelius Bullard	4	CoM	Decatur
Thomas, Edward Hill	2	T	Opelika, Ala.
Thomas, Francis Irvin	1	En	Paris, Tenn.
Thomas, Jacob Mack, Jr.	3	M	Bristol, Tenn.
Thomas, Kymble Faircloth	1	Co	Dublin
Thomas, Omer Lee	4	M	College Park
Thomas, Robert Glynn	3	M	Atlanta
Thomas, Smith Blythe	4	IM	Hapeville
Thompson, David Hyatt	2	GE	Little Rock, Ark.
Thompson, Edward Alexander	1	En	Atlanta
Thompson, Robert Maurice, Jr.	1	En	Clearwater, Fla.
Thompson, William Allen	1	En	Atlanta
Thomson, John Curtis, Jr.	3	E	Decatur
Thomson, Quentin Robert	2	M	Lake Charles, La.
Thomson, William Conner	1	A	Decatur
Thornton, Leonard Frend, Jr.	3	A	Thermopolis, Wyoming
Thrash, William Gay	3	CE	Atlanta
Thrasher, Henry Grady	1	Co	Athens
Thresher, Harold Hayward	1	En	Miami Beach, Fla.
Tilford, Henry Cannon, Jr.	3	M	Shelbyville, Tenn.

Tillman, David Arnold	1	En	Albany
Tilly, Harwell Parks, Jr.	3	Ch	Jonesboro
Tindell, Robert James	1	Co	Brunswick
Tindol, Rufus Lee, Jr.	3	CoCE	Dublin
Tinley, David Otto, Jr.	1	En	Farrell, Penna.
Tisdale, Thomas William	1	A	Nashville, Tenn.
Tobey, Frank Thrall	1	En	Memphis, Tenn.
Todd, Percy Ernest	3	M	Havana, Cuba
Tolbert, Harmon Scott	3	GE	Atlanta
Tolve, Leon Alfred	4	M	Atlanta
Toney, Albert Voley, Jr.	3	M	Atlanta
Tonyan, Kenneth John	1	En	McHenry, Ill.
Torch, Harry Theodore	1	Co	Macon
Townsend, James Murray, Jr.	4	IM	Atlanta
Toy, Rogers Bockover	2	CE	Atlanta
Trammell, Ernest Charles	4	M	Hamilton
Trawick, James Frank	1	En	Miami, Fla.
Traylor, Lucius Henderson	1	Co	LaGrange
*Treadway, Joe Earl	2	IM	Columbus
Treadwell, John Wilbur	1	IM	Atlanta
Tribble, Joe	1	En	Forsyth
Tripp, Jack Lyman	2	E	St. Petersburg
Trobaugh, Eugene Rowe	1	En	Tampa, Fla.
Troutman, James Edward	3	CoChE	Mooresville, N. C.
Truchelut, George Burnett	2	CoChE	Savannah
Truchelut, Harry Lebey	2	CoE	Savannah
Trussell, James Irwin	2	M	Atlanta
Tubb, James Richardson, III	2	M	Sparta, Tenn.
Tucker, James Thomas	2	E	Decatur
Tufts, John Robinson	4	IM	Atlanta
Tuhy, Ivan Emmanuel	2	M	Wilkes-Barre, Penna.
*Tuhy, Mirko Joshua	3	ChE	Wilkes-Barre, Penna.
Tullis, Jerry Bolton	3	E	Valdosta
Turnbull, Robert William	2	ChE	Canton, Ohio
Turner, Clifton Perry, Jr.	3	E	Thomaston
Turner, Donald Bernarr	2	IM	Atlanta
Turner, Henry Heywood	2	CE	Atlanta
Turner, Jack Curtis	1	Co	Anniston, Ala.
Turner, Richard Sollar	4	CoM	Atlanta
Turner, William Weaver	1	En	Thomaston
Tutan, George Washington	1	En	Savannah
Tyler, John William	2	CoM	New Rochelle, N. Y.
Tyler, Julius W.	3	IM	Ocilla
Tyson, Wilson Jackson	1	En	Atlanta

Ugalde, Hermann Herrera	1	En	Costa Rica, Central America
Underwood, Edwin Hill, Jr.	1	En	Miami, Fla.
Underwood, William Johnson	3	GE	Kansas City, Mo.
Valdes, Armando Joaquin	4	CE	Havana, Cuba
Valdes, Orlando Edmundo	2	A	Havana, Cuba
VanArsdale, Harold Charles	1	En	Plainfield, N. J.
VanBuren, Hiram H.	2	A	E. Cleveland, Ohio
VanBuskirk, Edwin Russell	1	En	Fairhaven, N. J.
Vance, Joseph Robert	4	CoChE	Atlanta
VandenHeuvel, George Renzo	3	M	Staten Island, N. Y.
VanHorne, Jack Dudley	1	En	Binghamton, N. Y.
VanValkenburgh, Franklin B.	1	En	New York, N. Y.
Varagona, Joseph James	3	CoChE	Birmingham, Ala.
Vaughn, Norman Manning	4	M	Pleasantville, N. Y.
Vaughn, William Enoch, Jr.	4	T	Atlanta
Veatch, Lawrence William	2	CoE	Trion
Veatch, Raymond Wesley, Jr.	1	En	Atlanta
Venable, James Jenkins	1	IM	Birmingham, Ala.
Vendrell, Jaime Alberto	3	GE	Argentina
Verdery, Holcombe Mathurine, Jr.	4	T	Harlem
Verdi, Joseph Andrew	3	A	Jersey City, N. J.
Verhey, George Marion	2	A	Chattanooga, Tenn.
Verlander, William Ashley	3	IM	Atlanta
Villageliu, Alberto Emilio	2	E	Havana, Cuba
Villanueva, Carlos Maurilio	3	E	Torreon, Coah, Mexico
Vincenzi, Tony, Jr.	2	CoChE	Rome
*Vinson, Edward Morris	3	IM	Cordele
Voorhees, Robert Ramsey	4	M	Holmdel, N. J.
*Voorhies, Edwin Springer	1	Co	Nashville, Tenn.
Voorhis, Cal George	3	IM	Atlanta
Voyles, James Homer	1	En	Morrow
Wadsworth, Paul Kay	1	IM	Shaker Heights, Ohio
Wagner, Julian Francis	1	En	Atlanta
Wagnon, Leo Albert	4	CoM	Quitman
Waite, Charles Thomas, Jr.	2	E	Gainesville
Waite, George Thorpe	4	CE	New York City, N. Y.
Waldon, Albert Overall	4	IM	Atlanta
Walker, Frank Alvin	3	IM	Atlanta
Walker, James Harold	2	E	Hapeville
Walker, James Harold	4	CoCE	Atlanta
Walker, John Linwood, Jr.	3	A	Nassawadox, Va.
Walker, John Randolph	1	En	Atlanta
Walker, John Wyeth	2	E	Cairo

Walker, Washington Edwin	1	Co	Birmingham, Ala.
Walkley, Cecil Coniff	1	IM	Atlanta
Wall, Wallace	1	Co	Guin, Ala.
Wallace, Paul Derwood	1	En	Atlanta
Wallace, Walstein Waldo	2	E	Augusta
Wallmeyer, Ignatius Joseph Herman	4	M	Richmond, Va.
Waltermire, Franklin Tillou	4	CoChE	Peoria, Ill.
Waltman, John Andrew	3	IM	Sierra Madre, Calif.
Walton, Norman James	1	En	Brandenburg, Ky.
Ward, Albert McConnell	2	E	Adairsville
Ward, Henry Owen, Jr.	1	En	Dublin
Ward, William Cleveland	2	IM	Tryon, N. C.
Wardle, Charles Edward	3	CoCE	Central City, Ky.
Ware, Joseph Lane	1	En	Fitzgerald
Ware, William Arthur, Jr.	2	ChE	Tuscumbia, Ala.
Ware, William Lane	2	E	Fitzgerald
Warlick, Louis Harley, Jr.	4	CoT	College Park
Warnock, Parks R., Jr.	1	Co	Atlanta
Warnock, Robert Burdick	2	CoM	Daytona Beach, Fla.
Warnock, William James	3	E	Brooklet
Warren, Thomas Nightingale	2	M	Macon
Warrick, James Edward	1	En	Blakely
Warthen, Vaughn James	G-Cer		Atlanta
Waters, Fred Brenning, Jr.	Sp		Atlanta
Waters, Herbert Lemar	1	IM	Cedartown
Watkins, David Comfort	3	IM	Charlotte Court House, Va.
Watkins, Howard Denman, Jr.	2	M	Atlanta
Watkins, Richard Wright	1	Co	Indian Springs
Watson, Archie Cowan, Jr.	3	IM	Greenville, S. C.
Watson, Robert Lee	3	IM	Atlanta
Watson, Theodore Hoffman	1	En	Carmel, Calif.
Watts, Hugh Edward	5	CoCE	Richmond, Va.
Watts, James McCleary	5	CoE	West Plains, Mo.
Wax, Bernard Murray	1	En	Brighton, Mass.
Wear, John Francis	1	En	Binghamton, N. Y.
Weatherford, Robert	1	En	Munford, Ky.
Weatherly, Ben Henry	1	En	Atlanta
Weaver, Grant Heard	3	IM	Griffin
Weaver, George Washington	3	CoCE	Pulaski, Tenn.
Weaver, Julian Holt	3	CoCE	Decatur
Webb, Bernard Alexander	4	A	Macon
Webb, Frank Klein, Jr.	4	M	Atlanta
Webb, Henry Grady	4	T	West Point
Webb, James Anderson	2	GE	Ft. Myers, Fla.
Webb, Robert Crenshaw	2	CoE	Daytona Beach, Fla.

Webster, Daniel	3	M	Decatur
Weeks, William Calvin, Jr.	1	En	Atlanta
Weibel, John George	2	GE	Atlanta
Weishaupt, Thomas John	2	CoCE	Bellaire, Ohio
Weissenberger, Eric George	2	E	Berlin, Germany
Weissman, Clem	2	CoM	Newark, N. J.
Welch, Edward Benjamin, Jr.	3	ChE	Brunswick
Wells, Guy Herbert	4	IM	Milledgeville
Werbin, Jacob Dave	1	En	Atlanta
Wesley, Edmund Perry	2	CoCE	Louisville, Ky.
West, William Arthur	3	ChE	Havana, Cuba
Westberry, Malcolm Hugh, Jr.	3	M	St. Augustine, Fla.
Westbrook, Robert William	1	En	Metuchen, N. J.
Whaley, Frank Halsey	4	M	East Moriches, N. Y.
Wheby, Earl Melvin	3	IM	Glen Rogers, W. Va.
Wheeler, Clinton Dawson	1	Co	Augusta
Wheeler, John Charles	4	A	Murfreesboro, Tenn.
Whiddon, Harold Dwight	1	Co	Tifton
Whisnant, John Black, Jr.	1	En	Summerville
Whitaker, Frank Allen	1	En	Waycross
Whitaker, John Gregory	2	CoT	Atlanta
White, Elbridge Buford	4	A	Wales, Tenn.
White, Hoyt Edward	5	CoE	Gainesville
White, Horace Matney	1	IM	Hamilton
White, Paul, Jr.	2	M	Atlanta
White, Rex Harry, Jr.	4	M	San Diego, Calif.
White, Roy Julian	3	CE	Hopkinsville, Ky.
White, Wenham Cannon	2	CoM	Atlanta
Whitehead, Fred William	1	Co	Miami, Fla.
Whitehead, Richard Kramer	G-ChE		Atlanta
Whitley, Joseph Quentin	1	En	Atlanta
Whitmire, Joseph Edward	1	En	Atlanta
Whitmore, William Franklin	1	En	Atlanta
Whitney, Sheldon Maxwell	1	En	Miami, Beach, Fla.
Whorton, John David	4	IM	Decatur
Wiggins, Joseph Lawton	4	AE	Hartsville, S. C.
Wilcox, Allen LeRoy	3	M	Tyler, Texas
Wilcox, Donald Brooks	G		Atlanta
Wilcox, Kenneth Knight	1	En	Orlando, Fla.
Wilcox, Leland Gale	4	ChE	Tyler, Texas
Wildberger, Ernest Carl	1	En	Atlanta
Wilder, Charles Crisp, Jr.	4	CoM	Hapeville
Wilhoit, Ray Burnett	4	IM	Atlanta
Wilkins, Grover Cleveland, Jr.	1	En	Dallas, Texas
Wilkins, James Milligan	1	IM	Atlanta

*Wilkins, Leonard	3	CoChE	Memphis, Tenn.
Wilkins, Roscoe Lee	1	Co	Alexandria, Ala.
Wilkinson, Terrell Harrison, Jr.	4	T	Cuthbert
*Wilks, Ed	2	E	LaGrange
Williams, Alfred Nash	3	AE	Dallas, Texas
Williams, Benjamin Wylly	3	E	Savannah
Williams, Carl Harwell	4	CoE	Miami, Fla.
Williams, Dan Milton	1	Co	Atlanta
Williams, Eugene	1	Co	Pontiac, Ill.
Williams, Harold Smith	4	T	Atlanta
Williams, James Ambrose	1	Co	Newnan
Williams, John Lucas	3	CoE	Boston
Williams, James Woodruff	1	En	Durham, N. C.
Williams, Lucien	4	T	Quitman, Miss.
Williams, Meadow Seifeit	2	CoChE	West Point
Williams, Robert Brewer	3	Cer	Atlanta
Williams, Robert Lee, Jr.	1	Co	Metter
Williams, Rhondda Samuel	1	Co	Sheffield, Mass.
Williamson, Nylsen Marion	2	T	Atlanta
Williamson, Tom Warren	1	En	Atlanta
Willis, Albert Gambrille	1	En	Concord, N. C.
Willis, David Ellery	1	Co	Tampa, Fla.
Willis, Henry David	2	CoE	Montgomery, Ala.
Willis, Jack	1	En	Ensley, Ala.
Willis, Ralph Holland	1	En	Atlanta
*Willis, William Paul, Jr.	2	CE	Atlanta
Willner, Lewis	1	En	Atlanta
Wills, Saul David	4	M	Savannah
Wilmot, Charles Lee	2	E	Atlanta
Wilson, Benjamin Baxter	2	E	Pensacola, N. C.
Wilson, Joseph Butler	2	CoChe	Augusta
Wilson, James Edwards	4	M	Dallas, Texas
Wilson, Joe Felton	2	E	Atlanta
*Wilson, James Harvey, Jr.	5	CoChE	Augusta
Wilson, John Harrison, Jr.	1	En	Atlanta
*Wilson, John Loyd	3	CoE	Liggett, Ky.
Wilson, James Young, Jr.	2	GE	Atlanta
Wilson, Leon Portlock	4	ChE	Atlanta
Wilson, Rex	1	En	Atlanta
Wilson, William Henry	2	M	Chattanooga, Tenn.
Wincey, Kirly Harris	2	CoCE	Valdosta
Winecoff, William Franklin	2	ChE	Atlanta
Winfree, Douglas Woodson	1	IM	Atlanta
Winn, Alonzo Judson Pursley	1	En	Guyton
Winn, Frank Jones	1	En	Thomasville

Winne, Ward Irwin	1	Co	Arlington, N. J.
Winship, Herring, Jr.	3	CoChE	Macon
Winter, Arthur Bruce	2	CoE	West Palm Beach, Fla.
Winters, Richard Harrington	1	En	Austell
Withers, John Samuel	1	Co	Asheville, N. C.
Wofford, William Russell	1	A	Atlanta
Wohlford, James Gordon	2	CoE	Dante, Va.
Wolf, Lewis Alfred	3	IM	Hamden, Conn.
Wolff, Charles Ralph	4	CoCE	Waycross
Womack, Taylor Scott	3	M	Atlanta
Wood, Charles Rowe	2	Cer	Raleigh, N. C.
Wood, John Enos, Jr.	4	M	Philadelphia, Penna.
Wood, Thomas Miller	1	Co	Macon
Wood, William Brown	2	M	Jasper, Tenn.
Woodall, John Henry	3	M	Woodland
Woodall, Robert Jerome, Jr.	2	M	Fairburn
Woodroof, Edward Pitt, Jr.	1	En	Petersburg, Va.
Woodruff, Carlysle Wellington	2	CoE	Columbus
Woods, Wilder Wilson	2	IM	Savannah
Woodside, Jack	1	IM	Atlanta
Woodward, William Bryans	1	IM	Atlanta
Woodworth, Leslie Rufus	3	T	E. Cleveland, Ohio
*Woolwine, Woodrum Elliott	3	AE	Lynchburg, Va.
Wooten, William Carlisle, Jr.	1	Co	Lawtey, Fla.
Worobey, Nicholas	2	CoChE	Wilkes-Barre, Penna.
*Worrell, Raleigh Osborn	3	E	Abbeville, Ala.
*Worrill, Edmund Hood	1	A	Leesburg, Fla.
Wright, Charles William	1	Co	Corning, N. Y.
Wright, Felix Hardeman	1	En	Covington
Wright, George Albert	2	Cer	Miami, Fla.
*Wright, Hugh Emmett	1	En	Decatur
Wright, Harry Ralph	1	En	Atlanta
Wright, Oliver Amos	3	IM	Houston, Texas
Wright, Malon Orrville	3	CoCE	Winter Garden, Fla.
Wright, Theron Edwin	1	A	Decatur
Wrye, William Florin	2	CoE	Birmingham, Ala.
Wyant, John Rowland	3	M	Atlanta
Wyatt, James Faust	3	M	Monroe, La.
Wyatt, William Warfield	1	En	Rome
Wylly, Alexander	1	En	New York, N. Y.
*Yabrow, Saul	3	T	Brooklyn, N. Y.
Yancey, Richard Hunter	1	En	Atlanta
Yates, Lascellis Washington	3	CoE	Centralia, Mo.
Yates, Presley Daniel	1	IM	Atlanta
Yopp, Alan Milton	3	AE	Spartanburg, S. C.

Youmans, Tump Stephen	2	CoCE	Tifton
Young, James Sterling	1	En	Winston-Salem, N. C.
Young, Oscar Lamar	2	IM	Atlanta
Yourtee, Lawrence Karn	G-Ch		Brunswick, Md.
Yundt, Albert Perdue	3	ChE	Atlanta
Zakheim, Benjamin David	4	IM	Atlanta
Zamborsky, Alden Nicholas	2	ChE	Clifton, N. J.
Zeigler, George Edward, Jr.	2	CoM	Thomasville
Zemek, Melville Mason	2	E	Nutley, N. J.
Zickler, Herbert Albert William	1	En	Seymour, Ind.
Ziegler, Werner Fred	4	CoT	College Park
Ziegler, Walter Herbert	3	CoM	College Park
Ziegler, William Ralph	1	Co	College Park
Zimmerman, Donald Scheel, Jr.	2	M	Atlanta
Zimmerman, Heyden	G-M		Kansas City, Mo.

SUMMARY OF ENROLLMENT

Enrollment by Classes

Graduate Students	34	Carried forward	2452
Seniors	374	Evening School	1106
Juniors	456	Summer School	494
Pre-Juniors	100		
Sophomores	632	Total	4052
Freshmen	843		
Irregular	13	Less duplicates	540
Total College Day Courses	2452	Total Net Enrollment	3512

ENROLLMENT BY MAJOR DEPARTMENTS

(Collegiate Day Courses)

Aero Engineering	34	General Engineering	47
Architecture	93	Industrial Management	279
Ceramics	30	Mechanical Engineering	340
Civil Engineering	129	Textile Engineering	106
Chemical Engineering	196	Unclassified	915
Chemistry	26		
Electrical Engineering	257	Total	2452

PROFESSION OR OCCUPATION OF PARENTS OF STUDENTS IN COLLEGE DAY COURSES

Merchants	410	Contractors	75
Farmers	243	Govt. Employees	161
Manufacturers	150	Insurance Agents	48
Salesmen	161	Ministers	34
Rwy. and Tel. Employees	180	Accountants	90
Physicians and Dentists	80	Teachers	53
Public Officers	57	Newspaper Men	40
Engineers and Architects	151	Skilled Laborers	158
Bankers	49	Miscellaneous	90
Lawyers	65	Not Stated	105
Real Estate	52		
		Total	2452

GRADUATES BY DEPARTMENTS AND BY YEARS

DEGREE		1890 1899	1900 1909	1910 1919	1920 1929	1930 1934	1935	1936	1937	Total
B. S. in Arc.	*1911			43	117	102	18	10	7	297
B. Arch.	1936							1		1
B.S. in A.E.	1932					43	17	16	14	90
B.S. in Cer.	1927				13	20	2	2		37
B.S. in †Chem.	1909		1	13	1		6	4	1	26
B.S. in Ch.E.	1903		16	23	91	131	34	36	24	355
B.S. in C.E.	1902		26	80	341	204	27	27	17	722
B.S. in Com.	1919			2	336	330				668
B.S. in E.E.	1898	9	91	255	492	345	59	41	35	1327
B.S. in G.E.	1923				157			3	2	162
B.S.	1917			4	92	105	58	52	40	351
B.S. in I.E.	1922				3	3				6
B.S. in I.M.	1937								10	10
B.S. in M.E.	1890	94	101	216	344	263	57	41	42	1158
B.S. in T.E.	1901		62	47	147	91	5	8	16	376
TOTAL B.S.		103	297	683	2134	1634	283	241	208	5586
B.C.S.	1916			26	124	171				321
Master of Sci.	1925				18	53	3	8	2	84
Prof. Degrees	1914			5	17	7	3			32
TOTAL DEGREES										6023
Certificates			29	49	153	55				286

NOTES: **The M.S. Degrees, Professional Degrees, and Certificates shown above are distributed among the departments as follows:**

(1) *M.S.*, in C.E., 23; in Chem., 6; in Ch. E., 10; in Com., 1; in E.E., 13; in M.E., 8; in T.E., 2; in A.E., 6; in I.E., 2. Not designated, 13.

(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.

GENERAL INDEX

	PAGE
Accredited Schools	207
Admission Requirements	25
Aeronautical Engineering	32
Alumni	268
Architecture	37
Athletics	190
Beck Loan Fund	195
Biology	49
Board of Regents	4, 23
Calendar	2
Ceramic Engineering	51
Changes of Courses	31
Chemical Engineering	60
Chemistry	57
Civil Engineering	69
Committees of Faculty	5
Co-operative Plan	76
Courses and Degrees	23
Degrees Conferred	201
Department of	
Aeronautical Engineering	32
Architecture	37
Biology	49
Ceramics	51
Chemistry and Chemical Engineering	57
Civil Engineering	69
Co-operative Plan	76
Economics and Social Science	89
Electrical Engineering	96
Engineering Drawing and Mechanics	105
English	109
Geology	116
Mathematics	121
Mechanical Engineering	125
Modern Languages	147
Personnel	176
Physics	152
Textile Engineering	155
Dining Hall	30
Dormitories	29, 30
Drawing	105
Economics and Social Science	89
Electrical Engineering	96
Endowment Fund	196
Engineering Drawing and Mechanics	105
English	109
Enrollment	267
Entrance Requirements	25
Examinations	25, 31
Expenses	27, 28, 29
Experiment Station	179
Extension Work	180, 184
Faculty and Instructors	9
Fees	27
French, A, Textile School	155
General Engineering	113
General Information	21
Geology	116
Grading	31
Graduates	201
Graduate Courses	163
Grant Field	190
High Schools	207
Holidays	2
Honors and Prizes	206
Industrial Education	182
Industrial Management	118
Library	185
Loan Funds	195
Master of Science	163
Mathematics	121
Mechanical Engineering	125
Mechanics	106
Medals	197
Medical Attendance	184
Military Prizes	199
Military Science	144

	PAGE
Mitchell Loan Fund	196
Modern Languages	147
Naval Science	20, 150
Night School	180
Officers of Administration	6
Personnel	176
Phi Kappa Phi	197
Physical Examination	28
Physics	152
Prizes	197
Regents	4, 23
Register of Students	211
Regulations	25
Reports	31
R. O. T. C.	28, 144, 150
Scholarships	195
Societies, Engineering	193
Student Council	189
Summer School	177
Textile Engineering	155
Tuition and Fees	27
Unclassified Courses	162
Units, Required for Entrance	25
Water Plant School	183
Whitehead Memorial Hospital	184
Withdrawal	31
Y. M. C. A.	186