THE
CLEMSON
AGRICULTURAL
COLLEGE
RECORD
THIRTY-THIRD YEAR

CATALOGUE
1925-26

ANNOUNCEMENTS
1926-'27

Published quarterly by the Clemson Agricultural College, Clemson College, S. C. Entered as second class matter April 25, 1905, at the Post Office at Clemson College, South Carolina under the Act of July 16, 1894, now superseded by the Act of August 24, 1912.
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1926

First Semester.

Aug. 31—Freshmen arrive. Cadet Officers, Company Commanders and first Sergeants report for duty.

Sept. 1—Work for Freshmen begins. Opening of the 34th session.

Sept. 2-7—Freshman Week.

Sept. 6—Re-examinations and make up work for old students begin at 8:30 A. M.

Sept. 7—Old students arrive. Matriculation and registration. Re-examination and make up work end.

Sept. 8—Work for old students begins.

Oct. 15—Stated meeting of Board of Trustees.

Nov. 6—First half of semester ends.

Nov. 25—Thanksgiving Day—A holiday.

Dec. 24—First day of Christmas holidays.

1927

Jan. 4—Students return from Christmas vacation by 11:30 P. M.

Jan. 19—Lee’s birthday—Half holiday.

Jan. 29—First semester ends.

Second Semester.

Jan. 31—Second semester begins.


Mar. 18—Calhoun’s birthday—Half holiday.

Mar. 18—Stated meeting of Board of Trustees.

Mar. 26—First half of second semester ends.

May 4—Stated meeting of Board of Visitors.

May 28—Examinations for Senior Class end.

May 30—June 4—Make up week for Senior Class.

June 4—All examinations end.

June 5—Commencement exercises begin. Baccalaureate sermon

Closing exercises of the Y. M. C. A.


June 7—Commencement Day. Graduating Exercises.

June 17—Stated meeting of the Board of Trustees.

July 8—Scholarship and entrance examinations at the county seats.

July 11—Last day for receiving scholarship applications.

Note: The above schedule is subject to change by the Faculty.
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(The first named is chairman).

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Finance—Mauldin, Bradley, Geer, Manning, Timmerman.
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Fertilizer—Manning, Evans, Wannamaker.

*The President of the Board of Trustees is, ex officio, a member of all Committees.
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1925

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Second District
R. B. Watson .................................................. Ridge Spring

Third District
R. C. Grier .................................................. Due West

Fourth District
W. P. Conyers ................................................. Greenville

Fifth District
G. W. Duvall .................................................. Cheraw

Sixth District
J. J. Lawton .................................................. Hartsville

Seventh District
E. C. Ridgill .................................................. Batesburg
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MALCOLM E. CAMPBELL,
Instructor of Carding and Spinning
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Assistant Professor of Military Science and Tactics.

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Assistant Professor of Military Science and Tactics.

LIEUTENANT PAUL G. BALCAR, (U. S. A.)
Assistant Professor of Military Science and Tactics.

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Quartermaster-Assistant to the Commandant.

FIRST SERGEANT JESSE M. PECK, (D. E. M. L.)
Instructor in Military Science and Tactics.

SERGEANT ARCHIE D. STERN, (D. E. M. L.)
Instructor in Military Science and Tactics.

SERGEANT GILBERT E. NARAMOR, (D. E. M. L.)
Instructor in Military Science and Tactics.
OTHER OFFICERS

PRESIDENT'S OFFICE

ENOCH WALTER SIKES, Ph. D.,
President of the College
MARGARET LEE SADLER,
Secretary to the President

REGISTRAR'S OFFICE

JAMES CORCORAN LITTLEJOHN, B. S.,
Registrar
JEAN BEVERLEY SLOAN,
Assistant to the Registrar
VIRGINIA EARLE SHANKLIN,
Stenographer to the Registrar

LIBRARIANS

MARGUERITE VERITY DOGGETT, A. B.,
Librarian
CORNELIA AYER GRAHAM,
Assistant Librarian
GLADYS L. GRAVES,
Assistant Librarian
MRS. HELEN SLOAN TORRENCE,
Experiment Station Librarian

TREASURER'S OFFICE

SAMUEL WILDS EVANS,
Treasurer and Secretary to Board of Trustees
EDWARD BERNARD ELMORE,
Bookkeeper
BOYCE B. BURLEY,
Assistant Bookkeeper
JANETTE PATTERSON,
Clerk and Stenographer
MRS. REBECCA CALHOUN SHIVER,
Clerk
DEPARTMENT OF STUDENT AFFAIRS

DAVID HILL HENRY, B. S.,
    Director Student Affairs

JAMES DOUGLAS HARCOMBE
    Mess Officer

WILLIAMS HOWARD SAUNDERS, L. L. B.,
    "Director" of Athletics and Head Coach

LEON KENNETH RICHARDS, B. A.,
    Assistant Coach

MONROE PARKER GILLAM,
    Assistant Coach

RELIigious OFFICERS
    Y. M. C. A. Secretaries

PRESTON BROOKS HOLTZENDORFF, JR., LL. B.,
    General Secretary, Y. M. C. A.

RICHARD HALLUM SMITH, B. S.
    Assistant Secretary Y. M. C. A.

College Pastors

REV. ERNEST CONNORS KOLB, A. B. Th. B. .......... Baptist

REV. SYDNEY J. L. CROUCH, B. D. ............. Presbyterian

REV. JOHN DAVID HOLLER, A. B. ................. Methodist

FERTILIZER ANALYSIS AND INSPECTION

RICHARD NEWMAN BRACKETT, A. B., Ph. D.,
    Chief Chemist

HUGH MILTON STACKHOUSE,
    Secretary Board of Fertilizer Control

BENJAMIN F. ROBERTSON, B. S.,
    Chemist (Fertilizer Analysis)

JOHN TREUTLEN FOY, B. S.,
    Assistant Chemist (Fertilizer Analysis)

BENJAMIN FREEMAN, B. S.,
    Assistant Chemist (Miscellaneous Analysis)

MARGARET E. GASQUE,
    Clerk to the Board of Fertilizer Control
COMMENCEMENT SPEAKERS—JUNE 1925

Baccalaureate Sermon

Dr. T. V. McCaul ........................................ Gainesville, Fla.

Commencement Address

Dr. A. A. Murphree ........................................ Gainesville, Fla.

STANDING COMMITTEES OF THE FACULTY*

Discipline—Earle, Brackett, Calhoun, Daniel, Doggett, Martin Barre.


Entrance Requirements—Daniel, Calhoun, Holmes, Littlejohn, Martin.


Student Petition—Littlejohn, Henry, Martin, Rhodes.

Athletic—Henry, Calhoun, Shanklin, Mitchell, Saunders.

Library—Bryan, Calhoun, Dargan, Henry, Bradley, Doggett.

Irregular Students—Hunter, Aull, Bradley, Klugh, Mitchell.


Graduate Work—Earle, Brackett, Calhoun, Daniel, Doggett

Religious Services—Earle, Bradley, Holmes

Chapel Entertainments—Daniel, Johnstone, Martin, Henry.

Text-book—Shanklin, Cheatham, Harris, Mitchell.

Summer School—Calhoun, Daniel, Doggett, Henry Crandall, Klugh, Littlejohn.


Chapel Music—Carpenter.

* The President is, ex officio, a member of all committees. The first named in each instance is chairman.
PART II.—ADMISSION—EXPENSES

ADMISSION TO COLLEGE

Session—1926-1927

I.—General Requirements.—All applicants must be at least sixteen years of age at the time of entrance and must be free from contagious or infectious disease. A certificate of good moral character and honorable discharge from the last school attended is also required.

11.—Scholastic Requirements.—For admission to college, graduation from an accredited four year high school with not less than 15 units is required. A State high school diploma will be required of applicants who have had the opportunity to earn this diploma.

II.—Scholastic Requirements.—For admission to college the applicant must present fifteen units from an accredited high school, of which three units must be in English, two and one-half in mathematics, and two in history. The remaining seven and one-half units may be selected from the list of high school subjects.

An applicant who has not completed the course of study in high school will be required to stand entrance examinations.

III.—How to Make Application.—Those desiring to enter should write the Registrar, Clemson College, S. C., for the prescribed application blank. On this blank should be given a list of the subjects studied in school, the time devoted to each, and the quality of the work. The application should be returned to the college before August 15 or sooner if possible.

IV.—Methods of Admission.—An applicant may be admitted; (a) by certificates of graduation from high school; (b) by examination; (c) by individual approval for special students; or (d) by a combination of these methods.

(a) A certificate of graduation from high school signed by the proper official will admit an applicant to the freshman class without examination, provided the certificate entitles the holder to fifteen units. No credit will be given on certificate for work done in high school unless the applicant is a graduate of the school.

b) Examination.—Applicants who are not graduates of secondary schools or applicants who are unable to enter on certificate will be required to take entrance examinations. Any of all entrance requirements may be met by examination. Candidates having examinations to stand are advised to take those examinations held by each county superintendent of education on the second Friday in July. These examinations are for the award of scholarships and for credit toward entrance. If by these exami-
nations the candidate finds himself unprepared, he will be saved the expense of a trip to the college in September. Entrance examinations are also held at the opening of college in September.

V.—Admission of Special Students.—An applicant not less than twenty years of age may be admitted to the college without fulfilling the entrance requirements, provided he gives evidence of seriousness of purpose and of sufficient preparation to pursue the course with profit. Such a student must satisfy all requirements for admission before becoming a candidate for a degree.

A limited number of persons in good standing and over twenty-one years of age may be admitted as special students with the opportunity to pursue special lines of study or investigation in any of the subjects taught in the college, provided the work can be scheduled. Such students are not permitted to live in the barracks, but are subject to general regulations of the college requiring regular attendance, good conduct and diligent prosecution of the studies selected. Degrees are not given to students in special courses, but a certificate of proficiency will be given when the work completed is deemed worthy of it. Room and board may be secured in the community at reasonable rates.

VI.—Admission to Advanced Standing.—Work that has been taken in other colleges will be credited for an equivalent amount of work so far as it applies to any course offered in the college. The applicant must present: (a) a letter of honorable dismissal from the institution last attended, and (b) an official transcript of his record, including entrance credits. College credits given by transfer are provisional and may be cancelled at any time if the student’s work is unsatisfactory. A student coming from another institution must spend at least one regular session in the college before he is eligible to apply for a degree. College credit may be given a graduate of an accredited secondary school by examination only.
High School Subjects Accepted For Admission To The Freshman Class

<table>
<thead>
<tr>
<th>Subject</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td></td>
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<tr>
<td>Grammar (High School text completed)</td>
<td></td>
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<tr>
<td>Composition and Literature</td>
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<tr>
<td><strong>History</strong></td>
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<tr>
<td>Ancient (full course)</td>
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<tr>
<td>Ancient short course</td>
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<tr>
<td>Community Civics (half year)</td>
<td></td>
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<tr>
<td>Modern History</td>
<td></td>
</tr>
<tr>
<td>American History and Government, or Civics</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td></td>
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<tr>
<td>Arithmetic</td>
<td></td>
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<tr>
<td>Algebra, to quadratics</td>
<td></td>
</tr>
<tr>
<td>Algebra, through quadratics</td>
<td></td>
</tr>
<tr>
<td>Algebra, through progressions and binomial theorem</td>
<td></td>
</tr>
<tr>
<td>Plane Geometry</td>
<td></td>
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<tr>
<td>Solid Geometry</td>
<td></td>
</tr>
<tr>
<td><strong>Latin</strong></td>
<td></td>
</tr>
<tr>
<td>Beginners’ or First Year and Caesar, 4 books</td>
<td></td>
</tr>
<tr>
<td>Cicero, 6 orations</td>
<td></td>
</tr>
<tr>
<td>Virgil, 6 books</td>
<td></td>
</tr>
</tbody>
</table>

| **Laboratory Sciences**                      |                                                  |
| General Science                              | 1                                                |
| Biology                                      | 1                                                |
| Chemistry                                    | 1                                                |
| Physics                                      | 1                                                |
| Physical or High                            |                                                  |
| School Geography                             | 1                                                |
| **Modern Language—**                        |                                                  |
| French                                       | 2                                                |
| Spanish                                      | 2                                                |
| German                                       | 2                                                |

| **Vocational Subjects**                      |                                                  |
| Agriculture                                  | 1 to 4                                           |
| Bookeeping                                   | 1                                                |
| Manual Training                              | 1 to 2                                           |
| Stenography and Typewriting                  | 1 to 3                                           |

*No credit is given for 36 weeks work in Beginners’ or First Year Latin.

**Credit depends upon the time devoted to the subject and the quantity of work accomplished. No credit is allowed for less than 72 weeks work in Modern Languages.

General Information Regarding Admission of Students to all Courses

Students desiring to enter College should apply to the Registrar for application blanks, and these, properly filled out, should be returned to the Registrar as early in the summer as possible, and in no case later than August 15th. If later the applicant may be crowded out.

Certificates of good moral character are required of all candidates; and if the candidate comes from another college, this certificate must show that he was honorably discharged.

In the admission of students who have met the requirements of the College, the following will be observed:

1. Students must undergo a medical examination, and no student will be admitted who is not healthy and free from contagious diseases including tuberculosis and venereal diseases. Vaccination is required of all students admitted.
2. In case the number of applicants exceeds the capacity of the College, students will be apportioned among counties in proportion to representation in the House of Representatives, under the following rules and regulations:

(a) As between applicants of equal preparation, the eldest will have the preference.

(b) Other things being equal, the first applicants will receive first consideration.

(c) When a county has not sent its quota, the places thus left shall be apportioned among the other applicants.

(d) Provided there is room in the barracks after the needs of the State have been met, students from outside the State may be admitted, and when once admitted may continue in College until the completion of their courses.

3. Applicants not entering promptly at the required date will have their rights given to applicants next on the roll.

Students upon arrival at the College at the opening of the session must report at once to the Registrar's office and matriculate before they will be assigned to quarters in the barracks. No student will be admitted to any of the classes or examinations of the College before matriculation and payment of fees.

Matriculation is equivalent to a pledge to conform to the rules of the College.

FEES AND EXPENSES

Settlement of College Fees.—Remittances should be made in cash, by money order, New York Exchange, or by local check, made payable to S. W. Evans, Treasurer. All required fees must be paid before a student can be assigned to a room in the barracks or permitted to begin work.

The fees and living expenses will be approximately as listed below. A leaflet giving the exact cost, including uniforms, will be mailed to the parents of all applicants prior to the opening of college in September. The cost of books, which varies with the class and course, is not included in the figures given below:
Living Expenses—

Board at $18.50 a month ......................................... $166.50
Laundry at $1.50 a month ......................................... 13.50
Heat, light & water at $2.10 a month ......................... 18.90

Total Living Expenses ........................................... $198.90

Fees—

Student Activity Fee ........................................... $12.00
Incidental Fee .................................................... 9.00
Laboratory Fee ................................................... 2.25
Breakage Fee ..................................................... 3.00
Hospital Fee ....................................................... 11.25
Matriculation Fees ............................................... 3.00

Total for All Required Fees .................................. $40.50

Total Living Expenses and Required Fees ..................... $239.40

Tuition for resident students who pay, add ............. 40.00

Non-resident students pay $80.00 tuition

These figures do not include the cost of uniforms. See information in paragraph header "Uniforms."

All payments are to be made quarterly in advance as follows:

<table>
<thead>
<tr>
<th>Payable on</th>
<th>High, with Tuition</th>
<th>Medium, with Free Tuition</th>
<th>Low, with Scholarship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrance</td>
<td>$74.35</td>
<td>$64.35</td>
<td>$39.35</td>
</tr>
<tr>
<td>Nov. 6, 1926</td>
<td>68.35</td>
<td>58.35</td>
<td>33.35</td>
</tr>
<tr>
<td>Jan. 29, 1927</td>
<td>68.35</td>
<td>58.35</td>
<td>33.35</td>
</tr>
<tr>
<td>Mar. 26, 1927</td>
<td>68.35</td>
<td>58.35</td>
<td>33.35</td>
</tr>
</tbody>
</table>

Total $279.40      $239.40                     $139.40

Uniforms.—All students are required to wear the regulation uniform of the college. The cost of the uniform garments needed by a student must be deposited with the Treasurer of the college at matriculation in September. The uniforms are made to individual measure and are purchased on the most favorable contract obtainable from a reputable manufacturer. The uniforms are the property of the student, the college merely acts as agent for the student and makes no charge or profit for handling.

If a student takes proper care of his uniforms and certain garments are serviceable for a second year, he will not be required to purchase a complete new outfit. The cost, therefore, to old students may be considerably reduced.

Any uniform allowances made to R. O. T. C. students by the Federal Government will be credited to the individual when the full amount of the commutation is received by the college.
Shoes: In addition to ordinary high top black shoes each cadet will be required to have one pair of tan shoes, army style.

Medical Fee: The medical fee paid by each student is intended to cover all ordinary cases of sickness and the treatment and medicines necessary. It is not intended to cover fees of doctors or specialists called into consultation, for performing operations, for special nurses, or for any medical or surgical attentions performed away from the college. Such expenses must be borne by the parent. The right of the college surgeon, with the approval of the President of the college, to incur in behalf of any student under his care any of these extra services is hereby expressly reserved.

Student Activity Fee: This fee entitles a cadet to admission to all lyceum entertainments, athletic games, privilege of Y. M. C. A. Building, and subscription to the college papers, "The Tiger" and "The Chronicle."

Breakage. The breakage fee of $3.00 is a deposit to cover damages or destruction of College property when individual responsibility can not be located. A student will be required to pay directly to the Treasurer for any damage done to College property for which he is personally responsible. The occupants of a room will be held responsible for any damage to property in the room.

Tuition. Tuition is $40.00 per session, payable quarterly. Free tuition is granted to residents of South Carolina unable to pay the same provided they comply with the State laws. All applicants for free tuition must file with the College the prescribed application to the State Board of Public Welfare. This blank will be sent to all applicants by August 15th, and must be returned properly filled in before the opening of College.

Immediately after the opening of College, the application is forward to the State Board of Public Welfare, which Board is required by law to investigate the financial standing of the parents or guardian, or the applicant himself if he is of age. This Board reports its finding, together with its recommendations, to the Clemson College Board of Trustees, who may revoke or confirm the recommendations.

Any person required to pay tuition may appeal to the State Board of Education as provided by law.

Applicants filing the prescribed form will be granted free tuition pending investigation by the State Board of Public Welfare and action by the Board of Trustees. Applicants for free tuition will be notified of the results of the investigation by about the first of January.

Non-resident students pay $80.00 tuition.
All Students are required to provide themselves with two mattress covers, and two clothes bags. These are regulation articles and can be secured only at the Cadet Exchange. They will last for the entire course of four years and can often be bought second hand.

Refund to Students. Refunds will be made to students under the following rules:

1. A refund for uniforms will not be guaranteed to students who withdraw from the college after the uniforms have been ordered. If order cannot be cancelled the uniforms will be sent to the cadet upon receipt of the same.

2. A refund for living expenses will be made at the rates charged, but no refund will be made for interruptions of less than two weeks or in cases of discharge issued less than two weeks from the end of the current quarter.

3. No fees will be refunded.

4. A refund of all moneys, except the matriculation fee of $3.00 and $1.00 per day for board, etc. will be made to a student who fails to meet the entrance requirements and who leaves college within ten days of the date of his matriculation; provided, however, that the refund for uniform cannot be guaranteed if the same has been ordered.

5. The college will not be liable for articles lost or stolen in the barracks.

6. The college will not be liable for lost or damaged laundry, unless reported within two days after the date upon which laundry was due to be delivered and then not more than the actual depreciated value of such articles as have been lost or damaged.

Optional Expenses. It is not possible to give an estimate of a cadet's expenditures for such amusements as dancing, moving pictures, etc. This depends largely upon the disposition of the young man. The college endeavors to reduce to a minimum the temptation to spend money needlessly, but the authorities cannot be responsible for a cadet's private expenditures. This must be a matter between him and his parents.

Subscription to the "Annual" and membership in the Literary Societies are very desirable, but are optional. These will cost approximately $5.00 for the session.

STUDENT HELPS

There is little opportunity at Clemson for a cadet to pay any large part of his expenses by working. There are few jobs that he can get, and his time is so fully taken up by college work that little remains except that which should be used in recreation and in participation in student activities. A substantial part of a college education lies outside the curriculum. If a student must labor every spare hour to pay his way, he not only dissipates his energy in non-educational effort, but he misses some of the
choicest privileges of college life. He misses the chance to read
in the library, to write for the college publications, to prepare
for the literary society work, to engage in athletics and the many
other items that go to make up college life at its fullest.
It is a much better investment for a student to borrow the
small amount of money necessary to pay his way at Clemson
than for him to take up all his spare time in non-educational
effort.
Scholarships and membership in the R. O. T. C. are available
sources of help to pay a cadet's way through Clemson. There
are also several loan funds available under certain conditions to
needy boys.
In the line of work that does not interfere with classes or
recreation are about forty positions as waiters in the messhall.
These positions require only about fifteen minutes before each
meal and pay $8.00 per month—about half the cost of board.

FOUR-YEAR SCHOLARSHIPS

Statement of the State Laws and College Rules Governing the
Award of Four-year Scholarships

1. Each county is allowed as many scholarships as it has rep-
resentatives in the General Assembly. The total number for the
State is now one hundred and seventy. The number of vacancies
in any particular county can be learned by making inquiry of the
Registrar of Clemson College.
2. Scholarship students are required to take one of the Agri-
cultural Courses, except that one scholarship per county is allowed
in the Textile Course. Scholarship students are not permitted to
take the Engineering or other courses.
3. Each scholarship pays $100.00 per session in cash, and
allows free tuition, worth $40.00 more. The regular scholarship
is good for four consecutive years, unless terminated by the stu-
dent's failure to maintain himself in his class and comply with
the rules of the College.

The Trustees have ruled that failure to maintain himself cannot
be excused on the grounds of sickness or other Providential reason.
4. A competitive examination is used as a basis for awarding
the scholarships. The examinations are conducted by the County
Superintendents of Education at the county seats, on the second
Friday in July, from 9 A. M. to 4 P. M. (July 9, 1926)
5. All applicants are required to furnish the Registrar of
Clemson College not later than July 12, 1926, the prescribed cer-
tificates showing financial inability, and the application form show-
ing school preparation. The applicant may not be considered
unless the above papers are received within the specified time.
6. The examination questions are prepared and the papers
graded by the Clemson Faculty. The names of the applicants who pass the examinations and who are otherwise qualified are forwarded to the State Board of Public Welfare together with the certificates of financial inability. The State Board of Public Welfare then makes an investigation into the financial standing of the applicant, his parent or his guardian. The said Board reports its findings together with its recommendations to the Clemson College Board of Trustees. This Board makes a recommendation to the State Board of Education based upon the result of the examinations and the findings of the State Board of Public Welfare. The State Board of Education makes the final awards and hears appeals, as provided by law.

7. The applicant is tested by competitive examinations in agriculture, English, and mathematics.

8. The College has a right to reject any applicant who in respect to age (16 years at the time of entering), examinations, or in any other respect, fails to meet its requirements for admission.

9. The following are not eligible for scholarship appointments:
(a) A person who during the current year has won or holds a scholarship at another State institution.
(b) A person who has been in attendance at Clemson College or "any other institution of higher learning known as a college or university,"—provided however, that this condition shall not apply if there are no other eligible candidates for the scholarship.
(c) A person who has forfeited a scholarship at Clemson College or any other State institution by failure to maintain himself.
(d) A person, except the son of a minister of the gospel, who has not resided at least six months in the county in which he is applying for a scholarship.

10. No applicant shall be debarred from standing the examinations because he has failed to fill out the necessary certificate of financial inability as required by law. However, this certificate must be in the hands of the Registrar of Clemson College before the applicant can be considered eligible for a scholarship. (The blank certificate form can be obtained at any time from the Registrar of Clemson College, or from the County Superintendent of Education on the day of the examinations.) It must reach the Registrar not later than noon of July 12, otherwise the applicant will be eliminated from the competition.

11. If a scholarship vacancy shall occur, and the county to which it belongs has no eligible applicant, the Clemson Faculty may fill the vacancy by awarding the scholarship to some legally eligible applicant from another county. However, any such appointment shall not last longer than the current session.

12. No recommendations for scholarship awards to alternates will be made later than 30 days after the opening of the session.
The one hundred and seventy four-year scholarships provided in this institution by the Legislature are apportioned to the counties of the State according to law as follows:

<table>
<thead>
<tr>
<th>County</th>
<th>Scholarships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbeville</td>
<td>3</td>
</tr>
<tr>
<td>Aiken</td>
<td>4</td>
</tr>
<tr>
<td>Allendale</td>
<td>2</td>
</tr>
<tr>
<td>Anderson</td>
<td>7</td>
</tr>
<tr>
<td>Bamberg</td>
<td>3</td>
</tr>
<tr>
<td>Bamberg</td>
<td>3</td>
</tr>
<tr>
<td>Berkeley</td>
<td>3</td>
</tr>
<tr>
<td>Calhoun</td>
<td>2</td>
</tr>
<tr>
<td>Charleston</td>
<td>9</td>
</tr>
<tr>
<td>Cherokee</td>
<td>3</td>
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<td>Chester</td>
<td>3</td>
</tr>
<tr>
<td>Chesterfield</td>
<td>3</td>
</tr>
<tr>
<td>Clarendon</td>
<td>4</td>
</tr>
<tr>
<td>Colleton</td>
<td>3</td>
</tr>
<tr>
<td>Darlington</td>
<td>4</td>
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<tr>
<td>Dillon</td>
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<td>Dorchester</td>
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<tr>
<td>Edgefield</td>
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<tr>
<td>Fairfield</td>
<td>3</td>
</tr>
<tr>
<td>Florence</td>
<td>4</td>
</tr>
<tr>
<td>Georgetown</td>
<td>3</td>
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<tr>
<td>Greenville</td>
<td>7</td>
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<tr>
<td>Greenwood</td>
<td>4</td>
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<td>Lee</td>
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<td>Marlboro</td>
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<td>McCormick</td>
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<tr>
<td>Newberry</td>
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<td>Oconee</td>
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<td>Orangeburg</td>
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<td>Pickens</td>
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<td>Richland</td>
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<td>Saluda</td>
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<td>Spartanburg</td>
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<td>Sumter</td>
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<tr>
<td>Union</td>
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<tr>
<td>Williamsburg</td>
<td>4</td>
</tr>
<tr>
<td>York</td>
<td>5</td>
</tr>
</tbody>
</table>

Note.—Scholarship students are credited at the beginning of each quarter with one-fourth of the value of the scholarship ($25.00). See fees and expenses for full information.

TWO-YEAR AGRICULTURAL SCHOLARSHIPS

The holders of these scholarships are required to take the Two-year Agricultural Course described elsewhere in this catalogue.

No financial certificate is required of applicants for these scholarships. The Act defining them is as follows:

"Sec. 1. Beneficiary Scholarships for Clemson.—There are hereby established and created fifty-one beneficiary agricultural scholarships in the Clemson Agricultural College of South Carolina, said scholarships to be of the value of one hundred dollars ($100) per annum, and free tuition, and to be awarded so that there shall be one scholarship to each county, and seven scholarships from the State at large.

"Sec. 2. To Whom Open—Examinations.—The said scholarships shall be open to any young man a native of South Carolina, eighteen (18) years old or over, who has spent not less than three (3) years in the active practice of farming, consideration being given to the need and worth of the applicant, and to his agricultural knowledge as shown by suitable examinations. All applicants shall stand such examinations as shall be prescribed by the proper authorities of the Clemson Agricultural College, and these examinations shall be held at the same time and in accordance with the general laws governing the examinations for other scholarship students.

"Sec. 3. Board of Education to Appoint.—The faculty of the said Clemson Agricultural College, or committee designated by the Board of Trustees for the purpose, shall recommend to the
State Board of Education for appointment to the scholarships one of the young men who has successfully passed the examination and is otherwise qualified.

"Sec. 4. How Scholarships To Be Paid For—Term of Scholarships. — The said scholarships shall be paid from the income of the said Clemson Agricultural College as now provided by law, and each shall continue for a term not exceeding two years, or for such length of time as the beneficiary shall be able to maintain himself as a student of the college, and the said sum of one hundred dollars ($100) per annum shall be placed to the credit of each beneficiary and applied to the payment of his board and other necessary expenses.

The Harmon Foundation

The Harmon Foundation of 140 Nassau Street, New York City, has appropriated $1,000.00 as a loan fund to assist worthy students for the session 1923-24, with the understanding that a similar appropriation will be made for the sessions 1924-25, 1925-26, 1926-27, and 1927-28. Only juniors and seniors, studying in a course leading to a degree, are beneficiaries of this fund, and only those students whose means of support are dependent in whole or in part on their own labor are considered. A maximum loan in any one year is $250.00.

The students sign installment contracts bearing interest at the rate of six per cent, payable at the rate of not less than ten dollars monthly, payments to begin one year after graduation. Contracts will be discounted at the rate of six per cent of the principal, if principal and interest are repaid within one year after graduation.

To insure the fund against losses, each borrowing student makes his contract for the amount of money borrowed plus a premium of 10%. He thus becomes responsible to this extent for the defaults in the payments of loans made to other students in his own college group receiving loans the same year. The premium is not used to augment the funds of the Foundation, and is not used for administrative expense. If there are losses, the losses will be deducted from the premium collected and the balance of the premium with 6% interest will be returned to the borrowers in proportion to the amount of money loaned and repaid.

If there are no losses in the group-operation the entire premium collected will be returned with interest.

William Wilson Finley Foundation of the Southern Railway.

The sum of $1,000.00 has been deposited with the College to be used as a loan fund and is available for young men living in counties traversed by the Southern Railway or the Blue Ridge Railway. The following conditions govern the use of this fund:

(a) That no help be extended to a student during his first year in College.
(b) That after he has been in College for one year, and during that time demonstrated not only his need, but his worth in character, studiousness and promise, the President of the College may at any time during the session loan to such needy student a sum not to exceed seventy-five dollars in any one session, provided the beneficiary is pursuing a regular agricultural course (two-year or four-year course), is a resident of a county traversed by the Southern Railway, or the Blue Ridge Railway, and does not hold a scholarship of any kind.

(c) That the student receiving this financial assistance shall give his note bearing 6 per cent. interest, payable one, two, or three years after completion of course. The loans of the first year shall be payable within one year after completion of the course, and any second and third loans shall be payable two and three years respectively after date of normal completion of the course.

At the discretion of the President the student may be required to furnish at least one endorsement from a financially responsible party, who may be the student's parent or guardian.

(d) The President shall at the close of each fiscal year, June 30, make a statement to the Clemson College Board of Trustees and to the President of the Southern Railway, giving full details as to the use and status of the Fund.

(e) Not more than one-fourth of the Fund shall be loaned in any one fiscal year.

George Cherry Foundation

Mrs. Mary Cherry Doyle of Oconee County has donated the sum of $1,000.00 to be used as a loan fund to worthy and needy students from Oconee and the part of Anderson County including Pendleton. The purpose of the fund is to commemorate her father, the late George Cherry, whose old home is near the College.

The following conditions govern the use of this fund:

1. That after a student has been in college for one semester, and during that time demonstrated his character, studiousness and promise, as well as his need for help, the President of the College may at any time thereafter during the session, lend to such student a sum not to exceed $100.00 during any one session; provided, that loans shall be made only to students who are pursuing regular two year or four year courses, and who are residents of Oconee County, or of the territory within a radius of five miles of Pendleton Courthouse, and who do not hold other scholarships of any kind.

2. That the student receiving this financial assistance shall give his note bearing 6 percent. interest, payable one, two or three years after completion of course. The loans of the first year shall be payable within one year after completion of the course, and any second, third and fourth loans shall be payable two, three or four years respectively after date of normal completion of the course.
At the discretion of the President, the student may be required
to furnish at least one endorsement from a financially responsible
party, who may be the student's parent or guardian.

3. The President shall at the close of each fiscal year, June 30,
make a statement to the Clemson College Board of Trustees, giving
full details as to the use and status of the Fund, and this shall be
published in the Oconee papers.

4. Not more than one-fifth of the Fund shall be loaned in any
one fiscal year.

Conditions Governing The Use of the $500.00 U. D. C. Fund.

John C. Calhoun Chapter

a. That no help be extended to a student during his first year
in college.

b. That after he has been in college for one year, and during
that time has demonstrated not only his need, but his worth in
character, studiousness and promise, the President of the College
may at any time during the session lend to such needy stud-ent a
sum not to exceed one hundred dollars in any one session, provided
the beneficiary is a lineal descendant of a Confederate Veteran,
and a member of the Junior or Senior Class.

c. That the student receiving this financial assistance shall
give his note bearing 6 per cent interest, payable one or two years
after the completion of the course. The loan of the first year
shall be payable within one year after the completion of the
course, and any second loan shall be payable two years after date
of normal completion of the course.

The student obtaining a loan from this fund shall be required
to furnish at least one endorsement from a financially responsible
party, who may be the student's parent or guardian; provided such
endorser shall be passed upon by a bank cashier.

d. The President shall at the close of each fiscal year, June
30, make a statement to the Clemson College Board of Trustees
and to the President of the John C. Calhoun Chapter U. D. C.
giving full details as to the use and status of the Fund.

e. Not more than one-forth of the Fund shall be loaned in
any one fiscal year.

PART III.—STUDENT LIFE AND ACTIVITIES

LIVING CONDITIONS

At Clemson all undergraduate students live in barracks under
military discipline. The College is located away from the dis-
tractions of city life while at the same time it possesses many of
its advantages. A student cannot leave the campus without per-
mission. He must at all times be present or accounted for.

The three barracks which house the students are steam heated
and electrically lighted from the central power station located
in rear of Barracks No. 2. Each building is provided with ample toilet facilities. In addition to the hot and cold water supplied to each of the barracks, running spring water is pumped to each floor for drinking.

The barracks or dormitories are divided into "halls" for military purposes, a unit being assigned to a hall under the supervision of a cadet officer. At night a cadet guard is maintained to insure order during study hours at which time the students are required to remain in their rooms.

Each student room is equipped with necessary furniture. The beds are single width. Bed linen, bed covers, pillows and towels must be furnished by the student.

The dining hall or mess hall is located in Barracks No. 1 and is under the supervision of the mess officer. The mess hall is well equipped with silverware, china, glassware, table linen, etc. The kitchen and cold storage plant is one of the very best in the South. All students living in the barracks eat in the mess hall.

RELIGIOUS INFLUENCES

Clemson co-operates to the fullest extent with the various churches and the Y. M. C. A. in the religious training of its students.

Four denominations, Baptist, Episcopal, Methodist, and Presbyterian have erected churches in the community. The college contributes liberally to the salaries of the resident ministers who do pastoral work among the students. All Protestant students are required to attend the Sunday morning services at one of the churches. Services for students of Roman Catholic faith are held frequently by a priest from one of the nearby towns.

Before beginning the day's work the faculty and students assemble in Chapel where brief devotional exercises are held by one of the local ministers. Attendance upon this service is required of all.

Sunday Schools and young peoples church societies are maintained by the local churches. Attendance upon these services is voluntary.

The Young Men's Christian Association is housed in its own building. The "Y" has become the chief social gathering place and is the center of voluntary religious activity. During the current session approximately 600 students have been enrolled in voluntary Bible Study Classes. Two trained secretaries are employed by the Association.
YOUNG MEN'S CHRISTIAN ASSOCIATION

The Young Men's Christian Association has supervision of the voluntary religious activities of the students and endeavors to serve the religious, social, and physical life of the college community in keeping with the general policies of the International Organization. It is a democratic student society, advised by a board of faculty and business men, and administered by General and Assistant Secretaries who have no official connection with the college as disciplinarians or instructors.

There are ten divisions of its work, as follows: Bible Study, Mission Study, Community Service, Membership, Conference, Social, Religious Meetings, Church and Relationship, and Publicity. Each of these divisions is in charge of a student committee, and the genius of the organization lies in keeping these men active in making the will of Christ effective in the lives of men. The chairman of these several committees constitute the cabinet, which meets weekly for consultation and plans.

In 1922 a type of organization termed the Friendship Council was inaugurated which has for its object the promotion of Christian fellowship in barracks. The past year this organization was composed of more than 60 members. This organization is responsible for the organization of 15 daily Morning Watch or prayer groups in barracks having a daily attendance of around 200 students.

The Y. M. C. A. endeavors to enroll every man in Voluntary Bible Study, Mission Study and the study of Sex Hygiene. During the past year seven hundred men were enrolled in Voluntary Bible Study Classes, almost 200 in Sex Hygiene, and over 200 in Mission Study. These classes are led by students and professors.

The Y. M. C. A. endeavors to see that every man in college learns to swim. Free lessons are given by the Secretaries and the members of the swimming team. Class and company basketball is under the auspices of the Y. M. C. A.

Many speakers of national reputation come to Clemson upon the invitation of the Y. M. C. A. Among the men invited during the past year are: Dr. James I. Vance, Hon. J. Stitt Wilson, Rev. John McSween, Dr. Ashley Chappel, Bishop Finlay and others.

CARE OF THE SICK

The Surgeon is one of the regular officers of the College, and his special duty is to look after the health of the students. He also has charge of the Hospital, and supervises all matters pertaining to the sanitation of barracks.

At a regular appointed time every day, students who so desire may consult the Surgeon, and those who are sick are cared for by experienced nurses in the College Hospital. In case of necessity students are allowed to consult the Surgeon at any time, or send for him, as may be required.
The Surgeon cannot undertake to notify parents every time a student reports to the Hospital for medicine, or for rest on account of some slight complaint. However, they may rest assured that they will be promptly notified of sickness of any consequence. In case of serious illness the Surgeon will telegraph them.

STUDENT PUBLICATIONS

The Clemson College Chronicle, a monthly magazine designed to encourage literary work among the students, is published jointly by the literary societies during the college session.

The Tiger, published weekly is devoted largely to athletics, Alumni and Local News.

The Annual, an illustrated volume, is published under the auspices of the senior class.

LITERARY SOCIETIES

Three literary societies, the Calhoun, the Columbian, the Palmetto, furnish a valuable supplement to the work of the college. These societies afford facilities for practice in debate, oratory, declamation, and essay writing, and their members acquire valuable knowledge of parliamentary law and usage. The meetings are held weekly, on Friday evenings. An annual

On these occasions a representative is chosen from each society to enter the contest for the Trustees' Medal at Commencement. The societies themselves also award medals annually to the best debater, orator, and declamer.

The societies occupy halls in the Academic Building, which are furnished with carpets and opera chairs and which are maintained entirely by the students. A small initiation fee is charged, and small yearly dues are collected to meet running expenses. All students are advised to join one of these societies.

State Oratorical Contest.—The societies also send a representative to the annual contests of the South Carolina Intercollegiate Oratorical Association, which includes the following institutions: Furman University, Wofford College, Clemson Agricultural College, Presbyterian College of South Carolina, Erskine College, Newberry College, South Carolina Military Academy, and the University of South Carolina.

LYCEUM COURSE

A Lyceum course, comprising about six numbers and employing some of the best talent on the American platform, is offered as a means of entertainment to students and others.

CLEMSON COLLEGE BRANCH OF THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

This organization is composed of instructors and students belonging to this national institution. This branch is maintained with the aim of acquainting the students with current engineering practice and problems.
STUDENT ACTIVITIES

STUDENT CHAPTER; AMERICAN SOCIETY OF MECHANICAL ENGINEERS

A local branch of this national society, composed of faculty members and of students pursuing mechanical engineering, is established at the college. Meetings are held periodically for the discussion of the latest engineering practices.

STUDENT CHAPTER: AMERICAN SOCIETY OF CIVIL ENGINEERS

Membership in this is limited to civil engineering students as follows: All seniors in good standing; the seven juniors having the highest class standing; and the one sophomore having the highest class standing.

Regular meetings are held monthly, and at such other times as exigencies favor. At these meetings engineering practice is presented and discussed; speakers from outside the college being obtained as often as practicable.

RESERVE OFFICERS' TRAINING CORPS

Under the provisions of the National Defense Act of June 3rd, 1916, the War Department has established at Clemson College an Infantry unit of the Reserve Officers' Training Corps (R. O. T. C.).

The purpose of the R. O. T. C. is set forth in Special Regulations 44, War Department, 1919, as follows:

1. The Reserve Officers' Training Corps is organized under authority of act of Congress of June 3, 1916, as amended by acts of Congress of September 8, 1916, and July 9, 1918. Extracts from these acts are contained in Appendix 1

2. The primary object of the Reserve Officers Training Corps is to provide systematic military training at civil educational institutions for the purpose of qualifying selected students of such institutions as reserve officers in the military forces of the United States. It is intended to attain this object during the time that students are pursuing their general or professional studies with the least practicable interference with their civil careers, by employing methods designed to fit men, physically, mentally and morally, for pursuits of peace as well as pursuits of war. It is believed that such military training will aid greatly in the development of better citizens. It should be the aim of educational institutions to maintain one or more units of the Reserve Officers' Training Corps in order that in time of National emergency there may be instantly available a large number of educated men, physically efficient and trained in the fundamentals of military science and tactics and fitted to lead intelligently the units of the armies upon which the safety of the country will depend. The extent to which this object is accomplished will be the measure of the success of the Reserve Officers' Training Corps.
3. The Reserve Officers' Training Corps will enrich the educations, applications and equipment. This will not only vitalize the national resources of schools and colleges by contributing a new program of study but give to the student a training which will be as valuable to him in his industrial or professional career as it would be, should the nation call upon him to act as a leader in its defensive forces.

Moreover, the wide variety of work recognized and accepted by the War Department as of intrinsic value for military purposes should leave on the mind of the student an indelible impression of the extent to which the modern Army is the nation in arms. Commerce, industry, agriculture and all the professions have each their contribution to make to the military organization.

4. A military unit is largely dependent for its efficiency upon the physical fitness of the individuals composing it. Physical training, therefore, will form an essential part of the military instruction. It will be the policy to encourage and support the physical training given by civilian teachers, thus cooperating with all other effective agencies in an effort to promote a more vigorous American manhood.

5. a. The policy adopted by the War Department to carry out the provisions of the act of Congress of June 3, 1916, is a matter of vital importance to every citizen interested in the educational system of our country and the development of American youth. It will aim to give all students of the Reserve Officers' Training Corps a thorough physical training, to inculcate in them a respect for all lawful authority, to teach the fundamentals of the military profession, leadership, and the special knowledge required to enable them to serve efficiently in the various branches of the military service.

b. The War Department aims to establish in selected civil educational institutions a system of training which will tend towards making better citizens and furnish a means whereby the graduates of such institutions can function more advantageously to the best interests of the nation in time of military necessity.

Requirements

All students at the college are required to take a minimum of three hours per week of military training. Members of the Freshman and Sophomore classes who are more than 16 years of age and who pass the physical examination must take the Basic Course as laid down by the War Department, and set forth under the heading "Military Department" in the detailed description of the course. A Junior and Senior student may continue in the Basic Course or by conforming to the following rules may enter the Advanced Course:

1. He must have completed the Basic Course.

2. He must be recommended by the President of the college and the Professor of Military Science and Tactics.

3. He must agree in writing to continue the course during the remainder of his time in college, devoting not less than five hours per week to the subject, and to attend the one summer camp prescribed by the War Department.
Students taking the Basic Course in their Freshman and Sophomore years are furnished one uniform each year, or commutation at a rate prescribed by the War Department. Members of the upper classes continuing in the Basic Course are not considered members of the R. O. T. C. and are not entitled to the uniform or commutation therefor. Freshmen or sophomores and special or short course students who are not physically qualified for the R. O. T. C. and members of these classes who for other reason do not enter the R. O. T. C. are not entitled to uniforms or commutation thereof.

At present rates the Government commutation for uniforms next session would be $6.00 for the session for sophomores and seniors and $30.00 for the session to freshmen and juniors. These figures cannot be guaranteed as they are fixed each session by the War Department.

Those taking the advanced course are entitled to this uniform or commutation therefor, and in addition, to an allowance for subsistence, (thirty cents per day at present), during the remainder of their course at college including the vacation between their Junior and Senior years. During the time in camp they are given the ration instead of commutation for subsistence, and at present are paid seventy cents per day.

**Summer Camps**

As noted above under head of "Requirements," every one taking the advanced course must take, under Army supervision and at Government expense, one period of camp training of about six weeks duration.

Transportation to and from the camps, subsistence while in attendance, and a uniform for camp use will be furnished.

**Obligations**

The only obligation incurred by the student taking the Basic Course is to take proper care of the uniform issued to him.

No obligations are imposed on those in the Advanced Course except as set forth in the contract and noted above, namely—

(a) To continue in it to completion unless sooner discharged by competent authorities.

(b) To attend one summer camp.

**After Graduation—Commission in O. R. C.**

After completion of the college course and attending the period of camp training the student is released from any further service under his contract with the United States. But if he so desires, and is recommended by his instructors, he may apply for a commission in the Officers' Reserve Corps (O. R. C.). These commissions are issued for periods of five years. If his application is approved and
the President of the United States will commission him, he may be required to report for instruction for a period not to exceed fifteen days in any one year, at Government expense, and under the salary of his grade. During this period of five years he may be called into active service only in case of actual or threatened hostilities, and then with the rank he holds in the Reserve,—Second Lieutenant or higher.

Appointment as Temporary Second Lieutenant in Regular Army.

Upon application, the President of the United States is authorized to appoint any Reserve Officer as a Temporary Second Lieutenant in the U. S. Army, and assign him to duty with the army for a period of six months. During this service he will receive $100 per month salary and the allowances of a Second Lieutenant. At the end of the period of instruction he reverts to his status as a Reserve Officer.

ATHLETICS

It is the policy of the College to sanction and encourage athletics so long as it does not interfere with studies and other duties. Football, baseball, basketball, and track are the most popular sports, and it is assumed that parents are willing for their sons to participate in these games unless the President is definitely notified to the contrary. The athletic teams are permitted to take a few trips each season, usually on Saturday, to play intercollegiate games. The college is a member of the Southern Intercollegiate Conference (S. I. C.) and of the South Carolina Intercollegiate Athletic Association (S. C. I. A. A.).

Athletic Council.—The Athletic Associations to which the college belongs have placed the athletic interests at each college under the supervision of an athletic council, consisting of members of the Faculty, the Alumni and the student body.

The Council consists of thirteen members—four student members elected by the student body; three members of the Faculty—two elected by the students and one by the Alumni; four members of the Faculty (one of whom shall be the Director of Student Activities) appointed by the President; and two alumni members appointed by the Alumni Association.

A member of the Faculty, known as the Director of Student Affairs, has the final authority in all lines of student activities in so far as their relation to college rules are concerned.

Intercollegiate Athletics.—For the regulation of intercollegiate athletics, the Faculty has adopted the following rules:

1. No student who has a class mark lower than P in more than eight hours of work in any one term shall be allowed during the ensuing term to take part in any intercollegiate contest. Demerits
shall be considered in the record, and more than forty demerits shall count as a failure in two hours of class work. Changing from one course to another, or from a regular to an irregular course, shall not interfere with the operation of this rule.

At the end of each grading period, the Faculty Athletic Committee will canvass the record of athletes, and if any are found to be so deficient as to endanger their scholastic standing, they will be withdrawn from the squad.

2. Absences from College.—The football team shall be allowed a maximum of ten days absence from the campus during the session for games away from the college. The baseball team shall be allowed a maximum of ten days; the band shall be allowed a maximum of seven days; the track team and the basketball team ten days. The tennis team, glee club, or any other organization hereafter sanctioned, shall be allowed a maximum of six days absence during each session. Saturday afternoon, Sunday, and holidays shall not count as days. No one contestant or representative shall be allowed to leave the campus for more than twenty days during the session, except at the discretion of the Faculty Athletic Committee.

3. No member of an athletic team shall be eligible for a managerial position in any other branch of sport.

4. No team shall be allowed to leave the college grounds to participate in any match games unless accompanied by a member of the Faculty, who shall be responsible to the Faculty for the conduct of the players and coaches while away from the college. Such representative shall be appointed by the chairman of the Faculty Athletic Committee, and his expenses shall be included in the expenses of the trip, provided that when any team, except the football team, leaves the college grounds, the chairman, at his discretion, may appoint a player or a manager in place of a member of the Faculty.

5. No student shall be eligible to participate in an intercollegiate contest who is away from the college without proper authority, or without having complied with all the rules or orders issued by the Commandant regarding such matters.

6. It shall be the duty of the Faculty Athletic Committee to see that the foregoing rules and regulations are strictly enforced.

**CADET EXCHANGE**

The college maintains a book and supply store known as the Cadet Exchange where students may purchase text-books, drawing instruments and other student supplies at reduced prices. A complete list of the text-books used in each course with the prices of the same will be furnished on application.
PART IV.—ORGANIZATION AND GOVERNMENT

ORGANIZATION OF THE COLLEGE

By Departments and Divisions

1. Agricultural Department

   Teaching
   Agronomy
   Geology and Mineralogy
   Horticulture
   Veterinary Science
   Zoology and Entomology
   Dairying
   Animal Husbandry
   Botany and Bacteriology
   Rural Sociology
   Education.

   Research
   Extension

2. Engineering Department

   Mechanical Engineering
   Electrical Engineering
   Civil Engineering
   Architecture and Drawing
   Forge and Foundry
   Machine Shop
   Wood Shop

3. Chemical Department

   Chemistry
   Chemical Analysis (Public State Work)

4. Textile Department

   Textile Chemistry and Dyeing
   Weaving and Designing
   Industrial Education
   Carding and Spinning

5. Academic Department

   English
   History
   Mathematics
   Physics
   Economics and Sociology

6. Military Department

   Military Instruction
   Military Discipline

7. Student Affairs

   Cadet Funds
   Student Activities

8. Miscellaneous

   President's Office
   Treasurer's Office
   Library
   Roads and Campus
   Heat, Light, and Water
   Construction and Repair

COLLEGE ORGANIZATION AND GOVERNMENT

Board of Trustees. The government of the college is vested in a Board of thirteen members, six of whom are elected by the Legislature and seven life and self perpetuating under the Clemson will. The function of this Board is legislative and not executive. The
Board determines the general policy of the college, makes the laws for its government, and directs the expenditure of its funds.

The President is the chief executive and administrative officer of the Board of Trustees. He is the head of the college and is responsible for its satisfactory working and success.

The College is divided into seven departments, namely, Agricultural, Engineering, Chemical, Academic, Textile, Military, and Student Affairs. A Director is at the head of each department and is responsible to the President for its conduct and success. The departments comprise the various divisions indicated on the preceding page. Each division is in charge of a professor who acts as chief of the division. The President conducts all official business with each department through its Director.

The Faculty consists of all officers of instruction in the college. The voting members are the Directors, Professors, Associate Professors, and Assistant Professors.

The faculty meets at least once a month, or whenever called by the President, and is an advisory body to the President, on the instructional work of the college and on such other business as he may bring before it.

Faculty Committees. In order to aid him in his executive duties and to carry on the instructional work of the college, the President appoints committees from the Faculty. To these are assigned certain specified lines of work and the committees are clothed with full authority.

Student Activities.—The Department of Student Affairs embraces all those interests supported by the cadets, and all student activities except the Y. M. C. A. It is the aim of the college to assist in every possible way in making these interests helpful to the student body as a whole. The Director of Student Affairs is in charge of all such activities.

The Discipline Committee.—The Discipline Committee is composed of six directors of departments and two full professors elected annually by the Board of Trustees. This committee constitutes the court of the college and tries cadets charged with serious offences under the regulations. The President is the reviewing authority of the Discipline Committee, and may at his discretion set aside or modify the sentences imposed. A parent, or a cadet over age, has the right to appeal from the sentence of the Discipline Committee to the Board of Trustees, provided the appeal is lodged with the President of the College within thirty days. This appeal must be forwarded to the President of the Board of Trustees, who if he deems the appeal meritorious, shall present it at the next regular or called meeting of the Board.

All trials by the Discipline Committee are open to the public, and all testimony is taken under oath and recorded stenographically as in a civil court. A student on trial may have some member of the faculty to assist him in his defense if he so desires.
CADET MILITARY ORGANIZATION AND GOVERNMENT

Clemson College is operated as a military school,—not for the purpose of making soldiers, but in order that the students may learn important life-lessons of obedience to authority, punctuality, system, courtesy and loyalty. The military system insures proper exercise and physical development, guarantees to the parent that the student shall at all times be present at the college, or away by proper authority, insures attendance upon classes and other duties, and insures proper provision for study as well as for recreation.

The military system places every student on the same basis. All students must dress alike, eat at the same table, live under the same conditions, and be subject to the same privileges and the same restraints. No distinction whatever is made because of wealth or social position or any other such consideration. The only distinguished men in a cadet corps are those who achieve the distinction by being able to do some one thing better than their fellow students.

The military system does not in any way interfere with the regular college work, and on the other hand enables this to be carried on at the highest efficiency. It is the military training more than any other single feature that gives to Clemson's graduates an advantage which is an important factor in their future progress and success.

The President.—The President of the College shall have the general command and government of the Institution, watching over its administration, discipline and instruction. He shall have authority to make rules, from time to time, governing the granting of permits and furloughs to cadets; to inspect anything in a cadet's room or personal bagage; to suspend or modify these regulations, or to publish special regulations when he considers it necessary, which shall have the authority of the Board of Trustees until they shall act on the same. He shall prescribe the hours of study, drill and recreation.

Commandant.—The Commandant of Cadets, under the President, has supervision of the Corps of Cadets in all that pertains to its organization, drill, military police, discipline and administration. He shall prescribe the order in which the furniture, bedding, books, clothing, equipment, etc., shall be arranged throughout the barracks and shall make a thorough inspection of the rooms, furniture, arms, equipment and uniforms of the cadets at least once each week. He shall have the right to inspect anything in a cadet's room or personal bagage. He shall perform such other duties as are prescribed in these regulations. He shall have the rank of Colonel.
Assistant Commandants.—The Assistant Commandants shall perform such duties as may be prescribed for them by the President or Commandant.

Military Instruction.—All students, excepting Post Graduates, must take a minimum of three hours military instruction per week. All who pass the required physical examination must take the Basic Course prescribed by the War Department for the R. O. T. C. during their Freshman and Sophomore years.

Members of the Junior and Senior classes are selected by the Professor of Military Science and Tactics, subject to the approval of the President, to take the Advanced Course prescribed for the R. O. T. C., receiving certain financial benefits allowed by the Federal Government.

Cadet Officers and Non-commissioned Officers—The Cadet Officers and Non-commissioned Officers are appointed by the Commandant, subject to the approval of the President. When practicable they shall be appointed from members of the R. O. T. C. who have been most studious and soldier-like in the performance of their duties, and most exemplary in their conduct. No cadet may decline any office to which he may be appointed.

As a rule the Officers shall be appointed from the Senior class, the Non-commissioned Officers except Corporals from the Junior class, and the Corporals from the Sophomore class.

Study Hours—Study hours are those parts of the day which are designated for study and shall be prescribed in orders.

Chapel and Church.—All students are required to attend Chapel Services, except on Saturday and Sunday. All students except Catholics and Jews are required to attend Divine Services at one of the local churches on Sunday mornings.

Furloughs and Passes—Any cadet who has been granted a furlough or pass and who stays over the time stipulated unless for sickness or other good and valid reasons acceptable to the Commandant, will lose his place in the college, and will be required to file a new application for admission, and pay a fee of $5.00 before being allowed to rematriculate. In case he has been sick a certificate from the attending physician must be submitted, and no such certificates will be accepted unless the President or Commandant has been notified in advance of the date the cadet is due to return.

The Commandant may, at his discretion, in lieu of rematriculation and payment of fee, punish the cadet by arrest, extras etc., according to the nature of his offense, the punishment not to exceed one month’s arrest, 20 demerits and 20 extras. All cadets returning late on furlough or pass are placed in room arrest pending an investigation of the reason for their late return.

All communications from parents requesting furloughs for their sons must be addressed or sent directly to “The Commandant” or to “The President,” and must set forth fully the reason for the
request. No furloughs will be granted unless the reasons given are considered satisfactory and sufficient justification for any loss of time for absence from classes or other duties. Telegrams which do not explain fully will not be accepted as complying with the above rules. In any case in which business is given as a reason the nature of the business must be explained fully.

A parent has the right to demand a discharge from college at any time and for any reason but the college authorities reserve the right to grant or refuse to grant furloughs.

Week End Leaves.—Week end leaves will be granted only to cadets who have attained to a prescribed standard in discipline.

Hazing.—Hazing is positively forbidden. Any cadet proven guilty of hazing in any form whatever will be dismissed from the college. Every cadet entering college will be required to sign a pledge agreeing to certain conditions in this connection.

Demerits.—Demerits are awarded for every unremoved report, the number depending on the nature and degree of the offense. Any cadet receiving eight-five demerits during any one semester or a total of one hundred and fifty demerits during the session shall be required to withdraw from college.

Discharge.—No cadet unless twenty-one years of age and paying his own way at college shall be discharged except on the written application of his parents or guardian addressed to the President or the Commandant, or for reasons satisfactory to the President.

Failure to Pay Dues.—The President may require a cadet to withdraw from college if after due and reasonable notice his dues to the college are not paid.

Text Books.—Each student will be required to own his own text books and necessary equipment, except in the case of brothers in the same class who occupy the same room.

All cadets shall submit their text books and other equipment for inspection at such times as are ordered.

Day Cadets.—All cadets shall live in the barracks, except those who live with their parents or relatives near enough to attend from their homes. Those so living at home shall be known as "Day Cadets." All will be required to live in the barracks at least six months of the freshman or sophomore year as may be directed by the President. No cadet will be given a Bachelor's Degree unless he shall have lived at least two-thirds of one session in barracks. Day cadets are subject to the Cadet Regulations.

Motor Vehicles.—No cadet or day cadet shall own or operate as his own any automobile or motorcycle during the regular session of the college.
Grades and Examinations:

1. The semester hour shall be the basis of all credits. One recitation hour or two laboratory or shop hours a week for one semester shall constitute a semester hour.

2. The standing of a student in his work at the end of a semester shall be based on daily class work, regularity of attendance, tests or other work, and the final examinations.

3. Written examinations shall be required in all subjects at the end of each semester, except in certain laboratory or practical courses where not deemed necessary by the departmental faculty. A student who has been absent from more than one-fourth of the total number of class periods in any subject for a semester is debarred from the final examination.

4. A semester grade once reported to the Registrar shall be the final grade for the period covered.

5. Separate grades shall be given on theoretical and practical work except where, in the judgment of the departmental faculty, separate grades are not practical.

6. No semester grade shall be given out until the close of the examination period for that class.

7. When an instructor completes a subject he may hold an examination on it before beginning the next subject, provided such examination does not conflict with the regularly scheduled work.

8. The grading system shall be as follows—

   A—Excellent. Indicates that the student is doing work of a very high character. The highest grade given.

   B—Good. Indicates work that is satisfactory, though not of the highest order.

   C—Fair. Indicates work of average or medium character.

   D—Pass. Indicates work below the average and unsatisfactory. The lowest passing grade. For graduation a student must have a grade above D on 50 percent of his total credit hours.

   E—Conditioned. Indicates a failure to satisfy the requirements as to daily recitations, tests or other work, as well as to the final examination, which condition in the opinion of the instructor may be made up by reexamination at some fixed time.

   F—Failed. Indicates that a student knows so little of the subject that it must be repeated in order that full credit may be received.
I—Incomplete work. Indicates an absence from examination on account of sickness or other satisfactory reason, or that a relatively small part of the semester's work remains undone. A grade I is not to be given a student who has made a grade F on his daily work.

9. Absences from Class or Examination. Removal of Grade I:
A student who has been absent from more than one-fourth of the total class periods in a subject during a semester may be dropped from the class. Such a student who is permitted to continue in class shall not stand the final examination until the work missed has been made up.

All work missed on account of absences for good and sufficient reasons shall be made up to the satisfaction of the instructor within thirty days after the student returns to classes.

All incomplete grades (I's) not removed before the first class day of the first semester shall become failures, (Fs') and must be taken over as such.

A student who for reasons satisfactory to the faculty is absent from any of the first semester examinations, will be allowed to make up these examinations during the second semester at the convenience of the instructor or during the reexamination period just before Commencement. A student who is absent from any of the second semester examinations shall stand them during the make-up period in September. A student who is absent from an examination without excuse is graded E.

10. Removal of Conditions:
Only one opportunity shall be given a student to remove a condition (E) by a reexamination. A student who fails to pass such a re-examination shall be required to repeat the subject hour for hour in class. Not more than twelve credit hours of conditions for a session shall be removed by reexamination. A student shall not receive a grade higher than D when a deficiency is removed by reexamination.

First semester reexaminations shall be held just before Commencement in June, and second semester reexamination just before the opening of college in the fall. All conditions (E's) not removed before the first class day of the first semester shall become failures and be repeated as such. Seniors may remove conditions during the week preceding Commencement.

11. Removal of Failures:
A student who has failed (made a grade F) in a subject cannot receive credit for that subject until it has been repeated hour for
hour in class, except that in the case of correlated laboratory work, the number of hours to be taken shall be determined by the instructor. Where separate grades for class and laboratory work are given, that part of the subject shall be repeated in which the failure occurs.

12. Withdrawals on Account of Unsatisfactory Work:
A student who at the end of the first semester has failed, (made a grade F) on 9 or more credit hours of work shall be required to withdraw from college. A student who at the end of the session has failed (made a grade F) on 18 or more credit hours of work shall not be permitted to return the following session. (Should the application of this rule at the end of the first semester not be to the best interest of an individual student, he may be permitted to continue on probation and schedule a fewer number of hours. Such a student carrying less than a normal schedule must pass on all his work at the end of the next semester or be required to withdraw.)

Any student whose record is generally unsatisfactory at the end of a semester may be dropped from the college, provided the student and his parent or guardian were warned at mid-semester of this probable action.

13. Amount of Class Work Permitted and Required, Prerequisites:
The normal amount of work a student is expected to schedule shall be the number of credit hours listed in the curriculum which he is pursuing. A student shall not be permitted to schedule extra subjects or take over in addition to his normal schedule any work unless he has made during the preceding semester a grade of B or above on at least 50 percent of the total scheduled credit hours. Not more than five clock hours of work may be scheduled in addition to the number of credit hours prescribed in the curriculum.

A continuation subject in the next higher class shall not be scheduled until credit has been received for its prerequisites.

14. Dropping Class Work:
Upon the recommendation of the instructor concerned and approval of the Director, a student may be required to drop a subject because of neglect, excessive absences, or lack of application or preparation. A student required to drop a subject shall be placed on probation for the remainder of the semester, and his parent or guardian shall be notified.

A student who at the end of a semester makes a grade F on 6 but not more than 8 credit hours of work or who makes a
grade E on 10 or more credit hours of work, shall be required to drop from his schedule at least one theoretical subject. (See Rule 12.)

15. Time of Scheduling Work:
All students shall register for classes during the first two days of the semester. No subject may be added or scheduled by a student after the sixth class day of a semester.

16. Deficiencies in Year Courses:
A student who is conditioned (makes a grade E) on the first and second semester's work of a subject continuing throughout the session, shall be required to repeat the subject in class at the next recurrence.

17. How to Raise a Grade E:
A grade E may be removed as prescribed in Section 11. However, if a student makes a grade E in a subject which continues beyond the first semester and to the end of the second semester, the instructor may at the end of the session recommend that the grade be raised to a D, provided the grade made on the work of the second semester is A or B. In such a case the recommendation of the instructor shall be made a special report, must be approved by the Director of the department, and must accompany the grades of the second semester.

18. Promotion to the Senior Class:
A student shall not be permitted to enroll in the Senior Class until all the work of the Freshman and Sophomore Classes has been completed.

19. Requirements for Graduation:
For graduation a student must have completed as many credit hours as are required in his course with a grade above D on 50 percent of the total credit hours. All work must be completed before 5 P. M. on the Saturday preceding Commencement. Residence of at least one regular session shall be required for graduation.

20. Seniors Failing to Graduate:
A Senior who fails to graduate because of either one E or one F on any subject shall have an opportunity of removing it by examination during the make-up period in September, provided the cadet can furnish evidence of having done satisfactory study. Failing to do this he shall take the subject over with the next class. In either case, the degree will not be awarded until the following Commencement.
21. **Change in Course:**
A change in course for freshmen and sophomores may be made during the first thirty days of the session.

22. **Honors and Medals:**
The names of all cadets who at the end of each semester have no failures, no work to make up, and not more than 30 demerits, shall be published and a notice sent to their parents.

23. **The Norris Medal:**
The Norris Medal shall be awarded to that graduate who shall deserve the same because of meritorious conduct and scholarship. His scholarship shall be determined by the average semester marks for the last three years of his college course.

24. **Miscellaneous:**
Each student shall be required to own his individual text books and the necessary equipment, except in the case of brothers in the same class who room together.

All requests from the students to the faculty must be made in writing.

**MEDALS AND HONORS**

**Honorable Mention.**—Students who at the end of a semester have no failures, no work to make up, and not over thirty demerits will have their names publicly announced, printed in "The Tiger," and notification sent to their parents.

**Trustees’ Medal.**—The Board of Trustees has established a gold medal, to be awarded annually to the best speaker among the representatives of the literary societies at Commencement. These representatives are chosen by judges selected by the societies at the annual public exercises in Memorial Hall. The medal is awarded by judges selected by the Faculty. (The medal was won in 1925 by Cadet J. C. Bagwell of Anderson County.)

**Norris Medal.** The following is from the will of Hon. D. K. Norris, a life trustee of Clemson, who died in 1905:

"I give $500 face value, Norris Cotton Mill stock, to the Trustees of Clemson Agricultural College of South Carolina, on condition the dividend thereon shall be applied annually to the purchase of a gold medal, to be known as the 'Norris Medal,' to be awarded to the student of Clemson meriting the same at graduation, under such rules and conditions as may be prescribed by the said Board of Trustees, and which medal shall have engraved on it ‘Honos habet onus’ (Honor brings responsibility)."
In 1925 the medal was awarded to L. G. Causey of Horry County.

R. W. Simpson Medal. A medal designated as the "R. W. Simpson Medal" is awarded annually to the best drilled cadet in the freshman, sophomore, or junior class. In 1925 the medal was awarded to J. T. Mayfield of Denmark.

Literary Society Medals.—It is customary for the several literary societies to hold annual contests during the session. Gold medals are usually awarded to the best debaters, orators and declaimers.

The Chronicle Medals.—The Chronicle, the monthly magazine published by the literary societies, also usually awards three gold medals, for the best story, the best poem, and the best essay contributed by students during the year.

Farmers' Certificates of Merit.—Beginning with the session of 1914-1915 certificates of merit have been awarded each session to two farmers in South Carolina who have rendered distinguished services in the agricultural development of the state.

In 1925 the certificates were awarded to Mr. C. B. Woolsey, Aiken, S. C., and Mr. Fred H. Young, Timmonsville, S. C.

DEGREES, DIPLOMAS, AND CERTIFICATES

The degree of Bachelor of Science is awarded to those students who satisfactorily complete one of the four-year curricula. The course completed is specified on each diploma.

All work for a degree must be completed by 5 P. M. on the Saturday preceding commencement. Residence of at least one regular session is required for graduation. Diplomas are delivered to the candidates on Commencement Day.

Every candidate for a degree must pay to the Treasurer of the College prior to graduation the cost of the diploma.

The degree of Master of Science is for the present offered to candidates majoring in Education. To enroll for graduate work the student must be a graduate of an approved college or university.

Certificates.—Students who satisfactorily complete one of the two-year short courses are given certificates.
COURSES OF STUDY

The College offers the following courses of study:

AGRICULTURE
(a) Four-year courses in Agriculture with major work in Agronomy, Animal Husbandry, Chemistry, Dairying, Education, Entomology and Horticulture.
(b) Two-Year Course in Agriculture.

CHEMISTRY
(a) Four-year course in Chemistry.

ENGINEERING
(a) Four-year course in Architecture.
(b) Four-year course in Civil Engineering.
(c) Four-year course in Electrical Engineering.
(d) Four-year course in Mechanical Engineering.

TEXTILE
(a) Four-year course in Textile Engineering.
(b) Four-year course in Industrial Education.
(c) Two-year course in Textile Industry.

ACADEMIC COURSE
(a) Four-year General Course
(b) Pre-Medical Course.

SUMMER SCHOOL
Short courses are offered during the months of June and July to teachers, cotton graders, agricultural club boys, and college students with work to make-up.

EXPLANATION—In the curricula which follow the first column of figures represent the number of semester hours of credit assigned to each subject. The two figures in parentheses are the actual number of hours per week spent in class and laboratory respectively.

All students who are candidates for the Bachelor’s Degrees are required to take military drill three hours per week. In the junior year the R. O. T. C. students take in addition two hours of class work in Military Science, while the non-R. O. T. C. take Business Law the first semester and Meteorology the second semester.

(The R. O. T. C. seniors take also the two hours of Military Science and the non-R. O. T. C. take Psychology.
I—AGRICULTURE

The course in Agriculture, supplemented by work in Mathematics, English, Political Economy, Rural Sociology, History, and the Natural Sciences, allows no differentiation during the first and second years. Its object is to give the student a broad, general knowledge of the subject so that he will have a sound foundation for specialization during his Junior and Senior years. At the end of the Sophomore year it is expected that he will be able to choose intelligently which line of agricultural work he desires to follow.

In the Junior year a student is given the choice of four general branches of Agriculture. He may select one of the following groups: Animal Industry, Plant Industry, Agricultural Chemistry, and Agricultural Education. At the beginning of the Senior year, the student who as a Junior selected the Animal Industry group will major either in Animal Husbandry or in Dairying. The student who as a Junior selected Plant Industry will major in either Agronomy, Horticulture, or Entomology. The student who selected Chemistry will continue his chemical work, and the student who selected Agricultural Education will continue the study of this subject. A major course requires six hours per week of recitations, and six hours per week of laboratory each semester. In addition to the major work during the Senior year, a sufficient number of elective courses must be selected to bring the number of semester credit hours up to 18. A minimum of 18 semester credit hours is required. No student can elect over 20 semester credit hours without special permission of the faculty. In calculating semester credit hours, two hours of laboratory count as one hour of theoretical.
## COURSE I.—AGRICULTURE

### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>Mathematics 1</td>
<td>Mathematics 2</td>
</tr>
<tr>
<td>English 1</td>
<td>English 2</td>
</tr>
<tr>
<td>History 1</td>
<td>History 2</td>
</tr>
<tr>
<td>Chemistry 1</td>
<td>Chemistry 2</td>
</tr>
<tr>
<td>Field Crops. Agron. 1</td>
<td>Animal Husbandry 2</td>
</tr>
<tr>
<td>Drawing 1 and Shop</td>
<td>Drawing 5 and Shop</td>
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<tr>
<td>Military Science 1</td>
<td>Military Science 2</td>
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</table>

<table>
<thead>
<tr>
<th>Units (3,0)</th>
<th>Units (3,0)</th>
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<tbody>
<tr>
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### SOPHOMORE YEAR

<table>
<thead>
<tr>
<th>English 3</th>
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<tbody>
<tr>
<td>Physics 3</td>
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<tr>
<td>Geology 1</td>
<td>Geology 2</td>
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<tr>
<td>Botany 3</td>
<td>Botany 4</td>
</tr>
<tr>
<td>*Animal Husbandry 2</td>
<td>Zoology 2</td>
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<tr>
<td>Military Science 3</td>
<td>Farm Machy.—Agron. 2</td>
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<th>Units (3,0)</th>
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### JUNIOR YEAR

<table>
<thead>
<tr>
<th>English 5</th>
<th>English 6</th>
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<tbody>
<tr>
<td>Agric. Chemistry 13</td>
<td>Agric. Chemistry 14</td>
</tr>
<tr>
<td>Bacteriology 1</td>
<td>Dairy Husbandry 2</td>
</tr>
<tr>
<td>F. Management—Agron. 3</td>
<td>Soils—Agron. 4</td>
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<tr>
<td>Horticulture 1</td>
<td>Horticulture 2</td>
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<tr>
<td>Military Science 5</td>
<td>Military Science 6</td>
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<tr>
<td>Electives 3</td>
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<tbody>
<tr>
<td>21.5</td>
<td>20.5</td>
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</table>

**Junior Elective Subjects.**

*(Choose one group)*

**Group A—Animal Industry**

- Prin. Feeding—Ani. Husb. 3
- Veterinary Science 2
- Judging—Dairy H. 4
- Animal Husbandry 8a

**Group B—Plant Industry**

- Entomology 3
- Plant Phys.—Botany 6
- oEntomology 4

**Group C—Chemistry**

- Organic Chemistry 5
- Quant. Analysis—Chem. 3a

**Group D—Education.**

- Agric. Education Ed. 1
- Agric. Education 2

*After 1926-27 given only in Freshman year. †Elective for those intending to elect Agronomy. o Elective for those intending to elect Entomology.
At the beginning of the senior year the student is required to select one of the following major groups and in addition a sufficient number of electives to make not less than 18 or more than 20 semester credit hours for each semester. These electives may be chosen from the courses given by other divisions of the college when approved by the Head of the Division in which the major is being taken and the Director of the Department.

The student must schedule during the first semester either Political Economy 1, or Rural Sociology 1, as one of the electives.

### Agronomy Major—1

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genetics—Agron. 5</td>
<td>Plant Breeding—Agron. 6</td>
</tr>
<tr>
<td>Crops—Agron. 9</td>
<td>Crops—Agron. 10</td>
</tr>
<tr>
<td>Forage Crops—Agron. 7</td>
<td>Fertilizers—Agron. 12</td>
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<tr>
<td>Military Drill 7</td>
<td>Military Drill 8</td>
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### Animal Husbandry Major—2

<table>
<thead>
<tr>
<th>First Semester</th>
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</thead>
<tbody>
<tr>
<td>Feeds—Ani. Husb. 5</td>
<td>Poultry Production—A. H. 6</td>
</tr>
<tr>
<td>Animal Production—A. H. 7</td>
<td>Pork &amp; Sheep Production—A. H. 8</td>
</tr>
<tr>
<td>Judging—Ani. Husb. 9</td>
<td>Breeding—Ani. Husb. 4</td>
</tr>
<tr>
<td>Military Drill 7</td>
<td>Military Drill 8</td>
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<tr>
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### Chemistry Major—3

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<thead>
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<tbody>
<tr>
<td>Colloid Chemistry 19</td>
<td>Colloid Chemistry 20</td>
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<tr>
<td>Hist. of Chemistry 17</td>
<td>Stoichiometry—Chem. 18</td>
</tr>
<tr>
<td>Military Drill 7</td>
<td>Military Drill 8</td>
</tr>
<tr>
<td></td>
<td>1.5 (0,3)</td>
</tr>
</tbody>
</table>
### Dairy Husbandry Major — 4

**First Semester**
- Dairy Mfg.—Dairy Husb. 5 ........... 3 (2,2)
- Creamery Org.—D. Husb. 7 .......... 3 (3,0)
- Feeds—Dairy Husb. 9 .................. 3 (2,2)
- Military Drill 7 ......................... 1.5 (0,3)

**Second Semester**
- Dairy Mfg.—Dairy Husb. 6 .......... 4 (2,4)
- Dairy Farm.—Dairy Husb 12 .......... 3 (2,2)
- Breeding—Dairy Husb. 10 .......... 2 (1,2)
- Military Drill 8 ......................... 1.5 (0,3)

### Education Major — 5

- Agricultural Education 3 .......... 4 (2,4)
- Military Drill 7 ......................... 1.5 (0,3)

### Entomology Major — 6

- Econ. Entomol.—Ent. 5 ............... 3 (2,2)
- Insect Morphology—Ent. 9 .......... 3 (2,2)
- Ani. Parasitology—Ent. 11 .......... 3 (2,2)
- Military Drill 7 ......................... 1.5 (0,3)

### Horticulture Major — 7

- Pomology—Hort. 3 ...................... 3 (2,2)
- Plant Propagating—Hort. 9 .......... 3 (2,2)
- Olericulture—Hort. 7 .................. 3 (2,2)
- Military Drill 7 ......................... 1.5 (0,3)
II.—ARCHITECTURE

Architecture, always ranked as a fine art, is the oldest of the constructive sciences. It deals principally with the design of buildings, their sites and presentation, their construction, decoration and equipment. It is more circumscribed by utilitarian and technical conditions than any other of the fine arts, and in order to be successful it must be both practical and artistic.

Architectural design is the principal subject and much time is given to it. In this subject students in the drafting room, work out designs for buildings ranging from small structures to large public buildings and groups of buildings. Occasionally, a "sketch" problem, which has to be completed the same day, is given, but usually the problems require from three to six weeks for their completion. Individual criticism is given by the instructor during the progress of the problem and upon completion the drawings are hung up, criticized, judged and graded by members of the faculty. Thus, each student may profit by the experiences of others. The aim throughout this course is to develop imagination, creative power, ability to work out the organism of a building and skill in the clear and artistic presentation of the drawings.

History of architecture is also of great importance in this connection, for the architect must know the experiences and inspirations of the past, its successes and failures, that he may better live, think and build in terms of the present. The courses in freehand drawing and historic ornament are given not only for training in draftsmanship, but for creating effective work.

Strong courses in the constructional or engineering side of the profession, such as mathematics, mechanics, building construction, structural or working drawings and specifications, are given.

Students pursuing this course are advised to spend one or more summers in the routine work of an architect's office, as those who have had this experience advance faster in their work. A two year course will be offered for mature men who have had extended experience in architects' offices.
## COURSE II.—ARCHITECTURE

### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
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<th>Second Semester</th>
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<tbody>
<tr>
<td><strong>Mathematics</strong></td>
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<tr>
<td><strong>Physics</strong></td>
<td>1</td>
<td>Physics 2</td>
<td>3</td>
</tr>
<tr>
<td><strong>History</strong></td>
<td>1</td>
<td>History 2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Drawing</strong></td>
<td>3, 11</td>
<td>Drawing—Arch. 2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Shops</strong></td>
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<td>Elements of Arch.—Arch. 4, 6</td>
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### SOPHOMORE YEAR

| **Analytics—Math.**            | 5                    | Calculus—Math. 6                  | 4                    |
| **English**                    | 3                    | English 4                         | 3                    |
| **Hist. of Arch.—Arch.**       | 7                    | Hist. of Arch.—Arch. 8            | 3                    |
| **Design—Arch.**               | 11                   | Design—Arch. 12                   | 7                    |
| **Cast Draw.—Arch**            | 9                    | Cast Draw.—Arch 10                | 1.5                  |
| **Military Science**           | 3                    | Military Science 4                | 1.5                  |
| **Total Credits**              | 20                   | **Total Credits**                | 20                   |

### JUNIOR YEAR

| **English**                    | 5                    | English 6                         | 2                    |
| **Calculus—Math.**             | 7                    | Graphic Statics—C. E. 10          | 3                    |
| **Mechanics—M. E.**            | 3                    | Str. Materials—C. E. 8            | 3                    |
| **Bldg. Construction—Arch.**   | 17                   | Bldg. Construction—Arch. 18       | 4                    |
| **Design—Arch.**               | 15                   | Design—Arch. 16                   | 5                    |
| **Cast Draw.—Arch.**           | 13                   | Cast Draw.—Arch. 14               | 1                    |
| **Military Science**           | 5                    | Military Science 6                | 3.5                  |
| **Total Credits**              | 21.5                 | **Total Credits**                | 21.5                 |

### SENIOR YEAR

| **Economics—Econ.**            | 1                    | Sociology—Econ. 2                 | 2                    |
| **Bldg. Construc.—Arch.**      | 23                   | Bldg. Construc.—Arch. 24          | 5                    |
| **Heat and Sani.—Arch.**       | 25                   | **Heat and Sani.—Arch. 26**       | 2                    |
| **Design—Arch.**               | 19                   | Design—Arch. 20                   | 5.5                  |
| **Struct. Design—Arch.**       | 21                   | Struct. Design—Arch. 22           | 3                    |
| **Military Science**           | 7                    | Military Science 8                | 3.5                  |
| **Total Credits**              | 21                   | **Total Credits**                | 21                   |
This course is intended to prepare the student to engage in manufacturing operations involving a knowledge of chemistry, or for employment as chemist in commercial, or fertilizer inspection, or food and feeding-stuff inspection laboratories, and for experiment station or U. S. Government service. A student who has satisfactorily completed this course will also be well equipped to teach elementary chemistry, and to pursue advanced work in chemistry.

The course is fixed for the first two years, freshman and sophomore, and for the first semester of the junior year. Elections are allowed to make up the required 21.5 credits hours, in the second semester of the junior year, and in both semesters of the senior year, which give the student an opportunity to pursue the subject in the direction of chemical engineering, organic and physical chemistry, analytical and sanitary chemistry. The great advances in all branches of chemistry have made some specialization necessary, whether the student expects after graduation to enter any one of the various lines of work open to one who has had a thorough course in chemistry, or to pursue post graduate work. The opportunity for specialization in this course should be both attractive and profitable, whether the student expects to be a chemist, or desires to use his training and knowledge of chemistry in any of the many lines of work in which such training and knowledge are highly desirable, if not, indeed, indispensable.

In this course the student is well grounded in English, German, mathematics, physics mineralogy, and biology, as well as in general, organic, physical, and analytical chemistry, and is besides given an opportunity to specialize as above indicated.
# COURSE III.—CHEMISTRY.

## FRESHMAN YEAR

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## SOPHOMORE YEAR

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## JUNIOR YEAR

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## SENIOR YEAR

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## Senior Electives

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<td><strong>Chemical Geology</strong> 5</td>
<td><strong>Advanced Lab. Practice</strong> 28</td>
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<tr>
<td><strong>Technical Anal.</strong> 23</td>
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**Total Credits:**

**Freshman Year:** 21.5

**Sophomore Year:** 21.5

**Junior Year:** 21.5

**Senior Year:** 21.5

**Total Electives:** 21.5
V.—CIVIL ENGINEERING

This course is intended to prepare young men for entrance upon professional practice in some of the many branches of civil engineering, and also to meet the needs of those who, having been engaged in engineering work without a course of instruction, desire to equip themselves for more successful competition with those who have had such instruction.

In connection with the technical studies, liberal training is given in English, history, economics, pure mathematics, and the physical sciences. The course will also be found to embrace a considerable amount of drawing, shop work, and short courses in electrical engineering and mechanical engineering.

The distinctive work pursued by students in this course includes the field and office work of surveying and leveling; topographic surveying and drafting; the location and construction of railroads and highways, and the bridges and other structures in connection therewith; involving investigation as to the strength of the materials of construction and the theories involved in the use thereof; masonry construction; foundations on land and under water; a particular study of highway engineering, including a laboratory course covering all the standard tests of highway material, both bituminous and non-bituminous; municipal and sanitary engineering, including water-supply, sewerage and drainage; and a brief study of engineering law including contracts and specifications. Actual design, as well as analytic investigation, is given in all cases.
## COURSE V.—CIVIL ENGINEERING
### FRESHMAN YEAR

#### First Semester
- Mathematics: 3 (5,0)
- English: 1 (3,0)
- History: 1 (3,0)
- Physics: 1 (2,2)
- Shop: 1, 17 (2,0)
- Drawing: 5, 9 (2,0)
- Military Science: 1 (0,3)

#### Second Semester
- Mathematics: 4 (5,0)
- English: 2 (3,0)
- History: 2 (3,0)
- Physics: 2 (2,2)
- Shop: 2, 18 (2,0)
- Drawing: 6, 10 (2,0)
- Military Science: 2 (0,3)

Total: 19.5

### SOPHOMORE YEAR

- Analytics—Math. 5: 4 (4,0)
- English 3: 3 (3,0)
- Physics 5, 7: 4 (3,2)
- Surveying—C. E. 1: 4 (2,4)
- Descriptive Geom.—Draw. 13: 1 (0,2)
- Military Science 3: 1.5 (0,3)

Total: 20.5

### JUNIOR YEAR

- Calculus—Math. 7: 3 (3,0)
- Mechanics—M. E. 3: 3 (3,0)
- Geology 3: 2 (2,0)
- R. R. Location—C. E. 7: 2 (0,4)
- R. R. Curves—C. E. 5: 3 (3,0)
- Shop: 15 (0,3)
- Military Science 5: 3.5 (2,3)

Total: 20

### SENIOR YEAR

- Economics—Econ. 1: 2 (2,0)
- Masonry—C. E. 21: 2 (2,0)
- Roads—C. E. 23: 3 (3,0)
- Hydraulics—C. E. 17: 2 (2,0)
- Electrical Eng.—E. E. 7: 3 (2,2)
- Mechanical Eng.—M. E. 9: 4 (3,2)
- Road Materials—C. E. 31: 1.5 (0,3)
- Military Science 7: 3.5 (2,3)

Total: 21
VI.—ELECTRICAL ENGINEERING

Electrical engineering is developing so rapidly and is being applied in such widely different fields that it is impossible for any college course to cover it adequately. There are, however, certain fundamental laws which underlie all the important applications of electricity. In the careful study of these laws and a few of the more fundamental applications, this course attempts to lay the foundation on which the student may rapidly build his professional career in any branch of electrical engineering.

The course includes the study of those subjects which form a necessary foundation for the study of electrical theory and practice; sufficient drawing and shop work to develop the co-ordination between mind and hand, and at the same time give the student some idea of the possibilities of engineering materials; and other subjects which broaden his intellectual growth. He is encouraged to take an interest in public affairs, to give time to more extensive and diversified reading, and to enter into various student activities.
### COURSE VI.—ELECTRICAL ENGINEERING

#### FRESHMAN YEAR

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#### JUNIOR YEAR

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#### SENIOR YEAR

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VII.—MECHANICAL ENGINEERING

The course in mechanical engineering is designed to give the graduate as broad a training as possible and at the same time to fit him for some specific type of work.

It embraces practically all forms of engineering which have for their objects the application of the forces of nature to the accomplishment of the processes of industry. The course is designed to give an intimate knowledge of the materials used in engineering, the laws of mechanics and the characteristics of various types of machinery.

The shop courses embrace wood work, forge work, foundry and machine work. The purpose of this instruction is not to turn out skilled workmen but to train those faculties of mind which can best be reached through the work of the hand, and at the same time, give the student a clear knowledge of the characteristics and possibilities of the materials used in engineering.

Considerable time is given to the study of the laws of the physical sciences, in such subjects as physics, chemistry, mechanics, electricity and magnetism and thermodynamics.

During the fourth year stress is laid on the application of the fundamental principles already covered so that the graduate may be able to design or manage those types of machines which ordinarily come under the supervision of the mechanical engineer.

The mechanical engineer should have a good liberal education, so in addition to the regular technical work comprehensive training is given in English, history, economics, civics and related subjects.
## COURSE VII.—MECHANICAL ENGINEERING
### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>5 (5,0)</td>
</tr>
<tr>
<td>English</td>
<td>3 (3,0)</td>
</tr>
<tr>
<td>History</td>
<td>3 (3,0)</td>
</tr>
<tr>
<td>Physics</td>
<td>3 (2,2)</td>
</tr>
<tr>
<td>Shop</td>
<td>2 (0,4)</td>
</tr>
<tr>
<td>Drawing</td>
<td>2 (0,4)</td>
</tr>
<tr>
<td>Military Science</td>
<td>1.5 (0,3)</td>
</tr>
<tr>
<td></td>
<td>19.5</td>
</tr>
</tbody>
</table>

| Analytics—Math. | 4 (4,0) |
| English        | 3 (3,0) |
| Chemistry 1b   | 3 (2,2) |
| Physics 5, 7   | 4 (3,2) |
| Surveying—C. E. 3 | 2 (1,2) |
| Shop 7, 21     | 2 (0,4) |
| Descriptive Geom.—Draw. 13 | 1 (0,2) |
| Military Science 3 | 1.5 (0,3) |
|                | 20.5          |

| Calculus—Math. | 3 (3,0) |
| English        | 2 (2,0) |
| Mechanics—M. E. 1 | 3 (3,0) |
| Electrical Engr. E. E. 1 | 4.5 (3,3) |
| Design—Drawing 17 | 1.5 (0,3) |
| Shop 13        | 2.5 (0,5) |
| Military Science 5 | 3.5 (2,3) |
|                | 20            |

### SOPHOMORE YEAR

| Calculus—Math. | 4 (4,0) |
| Mechanical Engr.—M. E. 4 | 4 (3,2) |
| English        | 2 (2,0) |
| Mechanics—M. E. 2 | 3 (3,0) |
| Electrical Engr.—E. E. 2 | 4.5 (3,3) |
| Design—Drawing 18 | 1.5 (0,3) |
| Shop 14        | 1.5 (0,3) |
| Military Science 6 | 3.5 (2,3) |
|                | 20.5         |

### JUNIOR YEAR

| Economics—Econ. | 2 (2,0) |
| Str. Materials—C. E. 19 | 3 (3,0) |
| Mechanical Engr.—M. E. 5 | 7 (5,4) |
| Electrical Engr.—E. E. 5 | 4 (3,2) |
| Design—E. E. 11 | 1 (0,2) |
| Military Science 7 | 3.5 (2,3) |
|                | 20.5        |

### SENIOR YEAR

| Sociology—Econ. | 2 (2,0) |
| Hydraulics—C. E. 18 | 2 (2,0) |
| Mechanical Engr.—M. E. 6 | 7.5 (5,5) |
| Electrical Engr.—E. E. 6 | 4 (3,2) |
| Design—M. E. 14 | 1 (0,2) |
| Military Science 8 | 3.5 (2,3) |
|                | 20          |
VIII.—TEXTILE INDUSTRY

The course in Textile Industry is designed to give the student sound training, both theoretical and practical, in the sciences upon which manufacturing processes are based. The curriculum of the course recognizes that in a profession of so many aspects a broad general education, and a thorough knowledge of the underlying principles are necessary for its successful practice.

The first year of the course is the same as that of the other engineering courses offered. The study of textile subjects begins with the second year, and more time is given to these subjects in the Junior and Senior years. The practical work is carried on for the purpose of developing in the student habits of accurate observation, and some skill in manipulation, supplementing the theoretical work. In this work special consideration is given to economy of time, precision of results, and attention to details as well as to methods of fundamental importance.

This course does not presume to fit one for an executive position in a mill, but the graduate is in possession of such information, and has acquired such knowledge and experience that he may look forward to a successful career provided he has the necessary energy, application, and tact, and a willingness to begin at the bottom.
# COURSE VIII.—TEXTILE INDUSTRY

## FRESHMAN YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mathematics</strong></td>
<td><strong>Mathematics</strong></td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>English</strong></td>
<td><strong>English</strong></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>History</strong></td>
<td><strong>History</strong></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Physics</strong></td>
<td><strong>Physics</strong></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Shop</strong></td>
<td><strong>Shop</strong></td>
</tr>
<tr>
<td>1, 17</td>
<td>0, 4</td>
</tr>
<tr>
<td><strong>Drawing</strong></td>
<td><strong>Drawing</strong></td>
</tr>
<tr>
<td>5, 9</td>
<td>0, 4</td>
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<tr>
<td><strong>Military Science</strong></td>
<td><strong>Military Science</strong></td>
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### First Semester (19.5)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Mathematics</td>
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<td>English</td>
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<tr>
<td>History</td>
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<td>Physics</td>
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<td>Shop</td>
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<tr>
<td>Drawing</td>
<td>2</td>
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<tr>
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### Second Semester (19.5)

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<th>Course</th>
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<td>3</td>
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<tr>
<td>History</td>
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<td>Physics</td>
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<td>Shop</td>
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<tr>
<td>Drawing</td>
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## SOPHOMORE YEAR

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
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<tbody>
<tr>
<td>Analytical—Math. 5</td>
<td>4</td>
</tr>
<tr>
<td>English</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 1b</td>
<td>3</td>
</tr>
<tr>
<td>Surveying—C. E. 3</td>
<td>2</td>
</tr>
<tr>
<td>Descriptive Geom.—Drawing 3</td>
<td>1</td>
</tr>
<tr>
<td>Pickers—Yarn Mfg. 1</td>
<td>3</td>
</tr>
<tr>
<td>Fab. Construction—Tech. Fab. 1</td>
<td>2</td>
</tr>
<tr>
<td>Weaving—Tech. Fab. 11</td>
<td>1</td>
</tr>
<tr>
<td>Military Science 3</td>
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</table>

### Sophomore Year (20.5)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Calculus—Math. 6</td>
<td>4</td>
</tr>
<tr>
<td>English</td>
<td>3</td>
</tr>
<tr>
<td>Mechanics—M. E. 2</td>
<td>3</td>
</tr>
<tr>
<td>Roving Frames—Yarn Mfg. 3</td>
<td>3</td>
</tr>
<tr>
<td>Spinning—Yarn Mfg. 4</td>
<td>3</td>
</tr>
<tr>
<td>Dobby Design—Tech. Fab. 3</td>
<td>1</td>
</tr>
<tr>
<td>Fab. Analysis—Tech. Fab. 5</td>
<td>1</td>
</tr>
<tr>
<td>Weaving—Tech. Fab. 13</td>
<td>1</td>
</tr>
<tr>
<td>Org. Chem.—Textile Chem. 1</td>
<td>3</td>
</tr>
<tr>
<td>Military Science 4</td>
<td>3.5</td>
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## JUNIOR YEAR

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus—Math. 7</td>
<td>3</td>
</tr>
<tr>
<td>English</td>
<td>2</td>
</tr>
<tr>
<td>Mechanics—M. E. 1</td>
<td>3</td>
</tr>
<tr>
<td>Roving Frames—Yarn Mfg. 3</td>
<td>3</td>
</tr>
<tr>
<td>Dobby Design—Tech. Fab. 3</td>
<td>1</td>
</tr>
<tr>
<td>Fab. Analysis—Tech. Fab. 5</td>
<td>1</td>
</tr>
<tr>
<td>Weaving—Tech. Fab. 13</td>
<td>1</td>
</tr>
<tr>
<td>Org. Chem.—Textile Chem. 1</td>
<td>3</td>
</tr>
<tr>
<td>Military Science 4</td>
<td>3.5</td>
</tr>
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</table>

### Junior Year (20.5)

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Mechanical Engineering 4</td>
<td>4</td>
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<tr>
<td>English</td>
<td>2</td>
</tr>
<tr>
<td>Mechanics—M. E. 2</td>
<td>3</td>
</tr>
<tr>
<td>Spinning—Yarn Mfg. 4</td>
<td>3</td>
</tr>
<tr>
<td>Dobby Design—Tech. Fab. 3</td>
<td>1</td>
</tr>
<tr>
<td>Fab. Analysis—Tech. Fab. 6</td>
<td>1</td>
</tr>
<tr>
<td>Weaving—Tech. Fab. 14</td>
<td>1</td>
</tr>
<tr>
<td>Org. Chem.—Textile Chem. 2</td>
<td>3</td>
</tr>
<tr>
<td>Military Science 5</td>
<td>3.5</td>
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</table>

## SENIOR YEAR

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics—Econ. 1</td>
<td>2</td>
</tr>
<tr>
<td>Mechanical Engineering 11</td>
<td>4</td>
</tr>
<tr>
<td>Weave Methods—Tech. Fab. 9</td>
<td>3</td>
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<tr>
<td>Weave Methods—Tech. Fab. 15</td>
<td>1</td>
</tr>
<tr>
<td>Spinning—Yarn Mfg. 5</td>
<td>3</td>
</tr>
<tr>
<td>Designing and Prep. Tech. Fab.7</td>
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</tr>
<tr>
<td>Applied Chem.—Textile Chem. 3</td>
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<tr>
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### Senior Year (21.5)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Sociology—Econ. 2</td>
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<tr>
<td>Electrical Eng. 7</td>
<td>3</td>
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<tr>
<td>Combers—Yarn Mfg. 6</td>
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<tr>
<td>Mill Econom.—Yarn Mfg. 8</td>
<td>1</td>
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<tr>
<td>Jacq. Design—Tech Fab. 8</td>
<td>4</td>
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<tr>
<td>Weaving—Tech. Fab. 16</td>
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<tr>
<td>Knitting—Tech. Fab. 18</td>
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<tr>
<td>Dyeing—Text. Chem. 4</td>
<td>2</td>
</tr>
<tr>
<td>Military Science 8</td>
<td>3.5</td>
</tr>
</tbody>
</table>

### Senior Year (19.5)
VIII (a).—INDUSTRIAL EDUCATION

By the enactment of the Smith-Hughes law for the promotion of vocational education, Congress has provided funds for encouraging and assisting in the development of instruction throughout the country in agriculture, home economics, and trades and industries.

This course has for its purpose the preparation of young men for positions of usefulness and responsibility in the trades and industries of the state. The course includes instruction in the fundamental principles of education, of engineering, and of the textile industry.

The prime purpose of the course is to prepare for positions as teachers of trade and industrial subjects, or as "service man" in a manufacturing establishment. As the textile industry is the dominant one in the state, that industry is given special prominence. The course is essentially a combination of instruction in the textile industry and the training of industrial teachers.

COURSE VIII (a).—INDUSTRIAL EDUCATION

FRESHMAN and SOPHOMORE subjects same as Course VIII.

JUNIOR YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculus—Math. 7</td>
<td>Mechanical Engineering 4</td>
</tr>
<tr>
<td>English 5</td>
<td>English 6</td>
</tr>
<tr>
<td>Industrial Education 5</td>
<td>Industrial Education 8</td>
</tr>
<tr>
<td>Roving Frames—Yarn Mfg. 3</td>
<td>Spinning—Yarn Mfg. 4</td>
</tr>
<tr>
<td>Dobby Design—Tech. Fab. 3</td>
<td></td>
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<tr>
<td>Fab. Analysis—Tech. Fab. 5</td>
<td>Fab. Analysis—Tech. Fab. 6</td>
</tr>
<tr>
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<td>Weaving—Tech. Fab. 11</td>
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<td>Military Science 4</td>
<td>Military Science 5</td>
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<td></td>
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<tr>
<td></td>
<td>3 (2,3)</td>
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<td>4 (3,2)</td>
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<td></td>
<td>1 (0,2)</td>
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<tr>
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SENIOR YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics—Econ. 1</td>
<td>Sociology—Econ. 2</td>
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<tr>
<td>Ind. Education—Ed. 7</td>
<td>Electrical Eng. 7</td>
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<td>Military Science 7</td>
<td>Ind. Education—Ed. 10</td>
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<tr>
<td>Electives</td>
<td>Ind. Education—Ed. 12</td>
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<td>Military Science 8</td>
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<td>Electives</td>
</tr>
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<td>3.5 (2,3)</td>
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<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td>20.5</td>
<td>20.5</td>
</tr>
</tbody>
</table>

Students taking the course in Industrial Education will be permitted to elect in the Senior Year under the direction of the Director of the Textile Department such supplies, as will best fit them for the field of industrial education in which they are most interested.
CURRICULUM

COURSE IX—ACADEMIC

This course is planned to meet the needs of those students who for any reason desire general training in the natural and social sciences. It is particularly recommended for men preparing for medicine, law, teaching, and scientific investigation. It is designed to provide the maximum of adaptability to individual requirements.

Entrance.—Candidates for the B. S. degree in this course must present not less than 15 standard high school units for entrance, divided as follows: English 3 units, mathematics 3 units, history 1 unit, science 1 unit, and one foreign language 2 units. The remaining 5 units may be chosen at will with regard to subjects. Candidates not presenting 2 units in one foreign language may however, be entered upon condition of successful completion of two years of one language during his college course, provided he meets the other entrance requirements and presents not less than a total of 15 units.

The Basic Course

The following basic course is required of all candidates for a degree in this course:

FRESHMAN YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1</td>
<td>(3,0)</td>
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<tr>
<td>History 1</td>
<td>(3,0)</td>
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<tr>
<td>Mathematics 1</td>
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<td>Chemistry 1</td>
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</tr>
<tr>
<td>Modern Language*</td>
<td>(3,0)</td>
</tr>
<tr>
<td>Military Drill</td>
<td>(0,3)</td>
</tr>
<tr>
<td>Shop or Drawing</td>
<td>(0,2)</td>
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</tbody>
</table>

*In lieu of a modern language students may choose not less than 8 semester credit hours during the session from the elementary courses offered by the following divisions: Botany and Bacteriology, Geology and Mineralogy, and Zoology and Entomology.

SOPHOMORE YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 3</td>
<td>(3,6)</td>
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<tr>
<td>Physics 1</td>
<td>(3,2)</td>
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<tr>
<td>Military Drill</td>
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<tr>
<td>Modern Language*</td>
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<tr>
<td>or</td>
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<tr>
<td>A Natural Science</td>
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JUNIOR YEAR

<table>
<thead>
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<th>First Semester</th>
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<tbody>
<tr>
<td>English 5</td>
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<td>(0,3)</td>
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SENIOR YEAR

<table>
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<th>First Semester</th>
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<tbody>
<tr>
<td>Economics</td>
<td>(2,0)</td>
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<tr>
<td>Military Drill</td>
<td>(0,3)</td>
</tr>
</tbody>
</table>

Total required work for the basic course not less than 74 semester credit hours.
The Major and the Minor

In addition to the basic course outlined above, each student must select one of the groups listed below as his major group and must present for graduation not less than 30 semester credit hours from the courses offered by the departments or divisions listed in the group. In the other group he must present as a minor not less than 15 semester credit hours.


Group II—Botany and Bacteriology, Chemistry, Geology and Mineralogy, Mathematics, Physics, and Zoology and Entomology.

In lieu of either the major or the minor, students who have had the prerequisites may be permitted to substitute an equivalent number of semester credit hours in vocational or prevocational courses offered by the following departments of the College: I Agriculture, II Chemistry, III Engineering, and IV Textile. In order to make this choice the student must file in advance with the Registrar of the College a petition outlining the courses desired and stating the reasons for the vocational choice. To become effective this petition must be approved by the Registrar of the College, the Director of the Academic Department, and the director of the department concerned in the choice.

Other Requirements.—In addition to the basic course, including the major and the minor, each candidate for graduation shall present not less than 27 semester credit hours of electives chosen at will from the courses offered in any of the departments or divisions of the college.

Not more than 22 credit hours of work may be taken in any one semester.

Freshman courses taken in the junior or senior years will receive only two-thirds of the usual credit.

Credit will not be given for only one year of a foreign language.

Students in this course will meet the Director of the Academic Department or his representative for advice or assistance.

Summary

Basic required course, not less than 74 semester credit hours
One major, not less than 30 semester credit hours
One minor, not less than 15 semester credit hours
Free electives, not less than 27 semester credit hours
Total, not less than 146 semester credit hours

Suggestions.—Students intending to do advanced work in mathematics or the natural sciences should take Mathematics 3, 4 in the Freshman year instead of the regularly prescribed Mathematics 1, 2.
Those who wish to apply for a professional teacher's certificate from any state department of education should complete not less than 18 semester credit hours from the courses offered by the division of Education.

In pursuing this course it will be found advantageous to complete the major and the minor before beginning work upon the free electives.

**PRE-MEDICAL COURSE**

Students wishing to complete in two years a pre-medical course covering the minimum requirements for entrance into a standard medical college should take the first two years of the Academic Course but should take Chemistry 1a and 2a instead of Chemistry 1 and 2. They should also complete Chemistry 5 and 6, two years of a foreign language, and not less than 8 semester credit hours in biology (botony and zoology), including at least 4 credit hours in laboratory. Psychology, drawing, and sociology are recommended as electives. A total of at least 73 credit hours should be completed for a pre-medical certificate.

**THE SHORT COURSES**

**COURSE XII—AGRICULTURE**

Normally, this course extends through two sessions. The subjects are selected from the regular programs of study and are arranged to suit the needs of the class. This program should be of great value to the young man who desires to spend not more than two years in College.

**COURSE XI—TEXTILE INDUSTRY.**

This two-year course is for the accommodation of young men who have only two years to devote to college work. The subjects are chosen from the regular college course in Textile Engineering and the schedules are made up under the supervision of the Director of the Textile Department. To enter the course the applicant must have had at least one year's experience in some cotton mill, as well as meet the general requirements for admission.
TEN WEEKS COURSES IN AGRICULTURE

These are intensely practical courses open only to men and boys with farm experience. The work will begin immediately after the Christmas holidays, each week being devoted to the study of one of several phases of Agriculture. It will be possible to spend from one to ten weeks. The courses to be offered in 1926 are—Bee Keeping, Dairy Husbandry, Swine Husbandry, Poultry Husbandry, Farm Cost Accounting, Soil Fertility, Cotton Growing Under Boll Weevil Conditions, Fruit Growing, Truck Growing, Farm Machinery.

There are no scholastic requirements for admission to these courses. They are open to any farm boy or man.

DESCRIPTION OF SUBJECTS

For convenience of reference all subjects are grouped under general heads. In the description of subjects, the first line gives (a) general classification and number, (b) specific title, (c) the semester taught, and (d) the names of the instructors. The second line gives the class and course in which the subject occurs. The figures in parentheses indicate the number of hours a week, theory and practice, respectively devoted to the subject.

Odd numbers are assigned to subjects taught during the first semester and even numbers to those taught during the second semester. A subject taught throughout the session is given both an odd and an even number.
AGRONOMY
Acting Professor Buie
Associate Professor McAlister
Assistant Professor Collings
Assistant Professor Robinson

AGRONOMY 1—Field Crops—Semester 1 (Collings)

Freshman I: (3 and 2)
A detailed course dealing with the history, origin, botanical characteristics, physiology, ecology, varieties, breeding, soil adaptations, fertilizer requirements, and the cultural methods of cotton and corn. Laboratory largely devoted to field studies of these crops. Recitations, assigned reading, problems.

Text-book: "Field crops for the Cotton Belt."—Morgan.

AGRONOMY 2—Farm Machinery—Semester 2. ...(McAlister)

Sophomore I: (3 and 2)
A study of the construction, adjustment and operation of the latest improved machinery for the farm including internal combustion engines. Laboratory work consists of a study of the various machines together with rope work, belt lacing and other farm practices.

Text-book: "Equipment for the Farm and Farmstead."—Ramsower.

AGRONOMY 3—Farm Management—Semester 1. (Robinson)

Junior 1: (2 and 2)
The economics of farming. Types of farming, and the economic, physical and biological factors determining them; price movements of agricultural products as they affect farm plans; selection of farm enterprises for highest profits; physical and financial organization of farms and their operation in areas representative of the important types; farm records; farmer’s credit and marketing problems.


AGRONOMY 4.—Soils—Semester 2. (Collings)

Junior I: (3 and 2)
A fundamental course in soils. It is intended to cover the basic principles of soil physics, soil fertility, soil biology, and soil management. It deals with the soil as a reservoir for water, as a medium for root development, as a source of nutrients, and as a home of organisms.
A laboratory course is given which deals almost exclusively with the physical properties of the soil.


AGRONOMY 5.—Genetics—Semester 1. (Buie)

Senior I, IX: Elective: (2 and 2)

A course dealing with the laws of heredity and equally applicable to plants or animals.


AGRONOMY 6.—Plant Breeding—Semester 2. (Buie)

Seniors I. Elective: (2 and 2)

Prerequisite: Agronomy 5.

A study of methods of improving field crops by breeding. All of the common field crops are included and especial emphasis is placed on cotton, corn, tobacco, small grains and forage plants.

Text-book: "Breeding Crop Plants"—Hays and Garber.

AGRONOMY 7.—Forage Crops.—Semester 1. (Collings)

Senior I: (2 and 2)

A course dealing with the characteristics of the various forage crops, with special emphasis on those grown in this state. These crops are studied with special reference to their adaptations, growing, harvesting composition, value and uses, and also with reference to their place in our cropping system.

Text-book: "Forage Crops and Their Culture"—Piper.

AGRONOMY 9.—Advanced Cotton—Semester 1 (Collings)

Senior I: Elective: (2 and 2)

Prerequisite: Agronomy 1.

An advanced course in cotton dealing with all phases of cotton production.

Text-book: Books and bulletins will be assigned as references.

AGRONOMY 10.—The Cereals—Semester 2 (Buie)

Senior I: Elective: (2 and 2)

Prerequisite: Agronomy 1, 2, 3 and 4.

A general course dealing with the cereals. Particular emphasis is laid upon the production of these crops in the south-eastern part of the United States.


"The Corn Crops"—Montgomery.
AGRONOMY 12.—Fertility and Fertilizers—Semester 2. (Collings)
Senior I: (2 and 2)
Prerequisite: Agronomy 4.
A course dealing with the history and development of theories of soil fertility in their relation to present day problems in soil fertility. A study is made of the sources, composition, value, and uses of fertilizers and manures and theories of soil fertility.

AGRONOMY 13—Agricultural Surveying and Drainage—Semester 1. (McAlister)
Seniors I. Elective: (2 and 2)
Surveying small areas with tape, level and rod, computing areas, topographic mapping. Design and study of drainage systems. Prevention of soil erosion with special emphasis on terracing.

AGRONOMY 14—Farm Building and Equipment—Semester 2. (McAlister)
Senior I. Elective: (2 and 2)
Lectures and laboratory exercises on the planning and arrangement of farm buildings. Special study of heating, lighting, water supply and sewage disposal systems for the farm homes.

AGRONOMY 15.—Farm Shop—Semester 1. (McAlister)
Senior I. Elective: (1 and 2)
This course is designed especially for Agricultural Education seniors who are prospective teachers of this subject in high schools. Special emphasis is placed on farm wood work and how to make simple repairs.

AGRONOMY 16—Farm Management—Semester 2. (Robinson)
Senior I. Elective: (2 and 2)
An advanced course designed for students expecting to become agricultural workers in the capacity of Agricultural Teachers or County Agents. Farm management surveys; farm records; tenancy and farm lease forms; farm law; the economic and statistical position of the agricultural products of the state will be studied in detail.

AGRONOMY 17—Marketing—Semester 1. (Robinson)
Senior 1. Electives: (2 and 2)
A course dealing with: the principles of marketing, commodity marketing and marketing programs. Factors determining prices; marketing services; market mechanism, mar-
ket grades and standardization; storage and warehousing; transportation; future trading; fundamentals of cooperation. Inspection, and grading of perishable and stable products, films on marketing and field studies will be given in laboratory.


AGRONOMY 19—Farm Motors—Semester 1. (McAlister)

Junior I. Elective: (2 and 2)

This is a study of power as applied to agricultural operations through the various forms of farm motors, such as animals, gas engines, tractors, etc.

Prerequisite: Agronomy 2—Farm Machinery.

Division Rooms and Equipment.

The Division of Agronomy occupies rooms on second floor of Main Building and the building below the Dairy Building, where the farm machinery is stored and where farm machinery work is given.

The Divison offices are all on the second floor of the Main Building. The lecture room and farm crops laboratory are also on this floor. The farm crops laboratory is well supplied with equipment and material for teaching the characteristics of the various crops and for a study of market classes and grades of the grain crops. Much of our laboratory work is conducted in the fields with the growing crops.

The soils laboratory is located in room No. 1, in the basement of Agricultural Hall, and is well supplied with modern equipment for teaching soil physics.

The farm machinery laboratory work is given in the large one story building, known as Farm Machinery Hall. This building has a concrete floor and is well equipped with the latest and best machinery, tractors, gas engines, farm lighting plants, and land drainage equipment.
AGRICULTURAL ECONOMICS

Professor Mills.

AGRICULTURAL ECONOMICS 1.—General Agricultural Economics
Semester 1, (Mills).
Senior 1, Elective: (2 and 0)
The application of the principles of Economics to Agriculture.
The farmer as a business manager, rent, interest, farm wages, taxation, etc., will be studied.

AGRICULTURAL ECONOMICS 2.—Land Economics.—Semester 2.
(Mills)
Senior, Elective. (3 and 0)
Land as a factor of agricultural production. Its value and methods of appraisal; renting and leasing; tenancy and ownership, land purchase and settlement as assisted by governments. Other methods of financing farm-purchase.

AGRICULTURAL ECONOMICS 3—Rural Sociology.—Semester 1.
(Mills.)
Senior I. Elective: (3 and 0).
Its purpose and methods. The relation of scientific agriculture to the rural community. Rural organization for business, health education, recreation, etc.

AGRICULTURAL ECONOMICS 4.—Rural Sociology.—Semester 2.
(Mills).
Senior I.—Elective: (2 and 2).
County and state government as affecting the rural community. National movements with local community organization.

AGRICULTURAL ECONOMICS 5.—Bible.—Semester 2 (Mills).
Senior. Elective: (1 and 0)
The Bible is studied (a) as history, showing the development of the Jewish people and their relations with other nations, (b) as the rule of faith and practice, discussing its peculiar claims for itself, its ethical content, and its influence upon the world.
ANIMAL HUSBANDRY
Professor Starkey
Associate Professor Morgan

ANIMAL HUSBANDRY 2—Types, Breeds, Market Classes and Grades of Farm Animals—Semesters 1 and 2 (Morgan)
Sophomore I. (3 and 2) First Semester.
Freshman I. (3 and 2) Second Semester.
This course is designed to give the student a knowledge of the characteristics and use of the various types of farm animals, the history, methods of improvement, and characteristics of the leading breeds; market demands and market classification of livestock.
“Types and Breeds of Farm Animals”—Plumb.

ANIMAL HUSBANDRY 3—Principles of Feeding—Semester 1. (Morgan)
Junior I. Elective: (2 and 2)
A study of the composition of feeds, use of feeds, feed requirements and calculation of balanced rations for farm animals; classification and value of feedstuffs.

ANIMAL HUSBANDRY 4—Animal Breeding—Semester 2. (Morgan)
Senior I. Elective: (2 and 2)
Prerequisite: Animal Husbandry 2 and Genetics.
This course is an advanced study in breeding which includes the practical application of the principles of genetics to the breeding of farm animals. The course includes a discussion of the subjects of reproduction, variation, heredity, selections, line breeding, inbreedings, cross breeding, grading and other subjects correlated with the breeding and improvement of farm animals.

ANIMAL HUSBANDRY 5—Feeds and Feeding—Semester 1. (Starkey)
Senior I. Elective: (2 and 2)
Prerequisite: Animal Husbandry 3.
A detailed study of the composition, digestibility, use and value of different feedstuffs; an advanced study of digestion, absorption, metabolism, and functions of food nutrients; feed requirements and feeding standards.

ANIMAL HUSBANDRY 6—POULTRY PRODUCTION—Semester 2 (Morgan)
Senior I. Elective: (2 and 2)
A study of the general principles of poultry production, including the importance and scope of the industry, incubation, brooding, housing, feeding, flock management and parasites and diseases.
ANIMAL HUSBANDRY

Text-book: "Poultry Production"—Lippincott

ANIMAL HUSBANDRY 7—ANIMAL PRODUCTION—HORSES AND MULES AND BEEF PRODUCTION—Semester 1 (Morgan)

Senior I. Elective: (2 and 2)

Prerequisite: Animal Husbandry 2 and 3

In this course the work is divided into two distinct units. For the first half of the semester a study of the breeding, feeding, care and management of horses and mules is taken up. This is followed by a study of the breeding, care and management of beef cattle, including a careful study of feeding and marketing methods. Text-books supplemented by station bulletins.


ANIMAL HUSBANDRY 8—PORK PRODUCTION AND SHEEP PRODUCTION—Semester 2 (Starkey)

Senior I. Elective (2 and 2)

Prerequisite: Animal Husbandry (2 and 3)

The feeding, breeding and management of sheep and swine.

Text-books: "Pork Production"—Smith

"Productive Sheep Husbandry"—Coffey.

ANIMAL HUSBANDRY 8a.—Live Stock Judging—Semester 2. (Morgan)

Junior. Elective: (0-2)

A course in live stock judging to prepare students who plan to major in Animal Husbandry for the live stock judging contest at the Southeastern Fair, which is held early in the Senior year. The fundamentals in judging and in giving reasons are taken up in detail.

ANIMAL HUSBANDRY 9—ADVANCED STOCK JUDGING AND MEATS—Semester 1 (Morgan)

Senior I. Elective (To be determined)

This is a course in the judging of breeding animals and fat stock, and in the slaughtering, cutting, and curing of meats, and the preparation of by-products.

Text-books: "Judging Farm Animals"—Plumb.

"Meats and Meat Products"—Tomhave.

ANIMAL HUSBANDRY 10—ANIMAL NUTRITION—Semester 2 (Starkey and LaMaster)

Senior Elective.

Prerequisite: Animal Husbandry 5 or Dairy Husbandry 9.

Recent developments in animal nutrition, covering the field of proteins, metabolism, vitamins, milk production, maintenance, and growth.
ARCHITECTURE

Professor Lee

Assistant Professor Crowgey

Instructor Siegler

ARCHITECTURE 2—Freehand Drawing—Semester 2 (Siegler)
Freshman II. (0 and 4)
Prerequisite: Drawing 3.

This course covers angular and parallel perspective, the oblique plane, the perspective of circles, sectioning and shading.

The study of pencil technique is stressed for sketching purposes, and charcoal work from the cast is given in order to develop a correct sense of values, form and proportion.

ARCHITECTURE 4—Elements of Architecture—Semester 2.
(Crowgey)
Freshman II. (0 and 2)
Prerequisites: Drawing 3, 11.

A study of classic proportions and design with details of "The Orders" and their application.

Text-book: "The Five Orders of Architecture" from the system of Vignola as arranged by Pierre Esquiez.

ARCHITECTURE 6—Descriptive Geometry—Semester 2. (Crowgey)
Freshman II. (0 and 4)
Prerequisites: Drawing 3, 11.

The fundamental problems in descriptive geometry are studied and applied to the solution of problems in architecture. Also problems in the casting of conventional shadows of architectural forms and the theory and practice of architectural perspective are solved.

Text-book: To be selected.

Reference books: McGoodwin's "Shades and Shadows"; Lubeschelz "Perspective."

ARCHITECTURE 7, 8—History of Architecture—Semesters 1 and 2. (Crowgey)
Sophomore II: (3 and 0)

Study of historic styles and monuments of architecture, classic, mediaeval and Renaissance. This subject is given by illustrated lectures and text-book. The student is required to do research in the library and to make sketches.

ARCHITECTURE 9, 10—Cast Drawing—Semesters 1 and 2
(Siegler).
Sophomore II: (0 and 3)
Prerequisite: Architecture 2.

ARCHITECTURE 11, 12—Architectural Design—Semesters 1 and 2. (Crowgey)
Sophomore II: (0 and 14)
Prerequisites: Architecture 2, 4, 6.
A series of simple problems in design, applying classic proportions to modern buildings; criticisms, sketch problems, Beaux-Arts problems. Rendering in water color and other mediums.
Architectural library reference books and plates.

ARCHITECTURE 13, 14—Cast Drawing—Semesters 1 and 2
(Siegler).
Junior II: (0 and 2)
Prerequisites: Architecture 9, 10.
Advanced work in the drawing of antique sculpture and from life. Any medium may be used in which the student cares to work, such as charcoal, conte, pastel, etc.

ARCHITECTURE 15, 16.—Architectural Design—Semesters 1 and 2. (Crowgey)
Junior II: (0 and 10).
Prerequisites: Architecture 11 and 12
Architectural library reference books and plates.

ARCHITECTURE 17, 18.—Building Construction—Semesters 1 and 2. (Lee)
Junior II: (3 and 2)
Prerequisites: Mathematics 5, 6.
Carpentry; study of building materials, their uses and forms; carpenter's, plasterer's and painter's work, details of frame construction, hardware, estimates and specifications; problems in calculation.
Text-books: Kidder's "Building Construction and Superintendence," Part II; Kidder's "Architects' and Builders' Pocket Book."
ARCHITECTURE 19, 20—Architectural Design—Semesters 1 and 2. (Crowgey)
   Senior II. (0 and 11)
   Prerequisites: Architecture 16, 17.
   Advanced problems in architectural design. Composition, planning, etc., worked up in detail. Eight and ten hour sketch problems. Beaux-Arts problems, Historic ornament.
   Architectural library books and plates as references.

ARCHITECTURE 21, 22—Structural Design—Semesters 1 and 2. (Lee)
   Senior II: (0 and 6)
   Prerequisites: Architecture 17, 18.
   Preparation of complete working drawings and specifications for frame and masonry buildings, detail drawings of the construction with necessary calculations. Steel and reinforced concrete design. Blue printing.

ARCHITECTURE 23, 24—Building Construction—Semesters 1 and 2. (Lee)
   Senior II. (5 and 0)
   Prerequisites: Architecture 17, 18.
   Masonry; study of foundations, cement, lime, mortars, stone, brick, terra-cotta, details of masonry construction, fireproofing of buildings, reinforced concrete and steel construction, estimates, specifications, superintendence, problems in calculation, contracts, laws, ethics.

ARCHITECTURE 25, 26—Heat and Sanitation—Semesters 1 and 2 (Lee)
   Senior II: (2 and 0)
   Study of the various systems of heating and ventilating of buildings, together with apparatus used in each, such as boilers, fans, etc. Illumination of buildings.
   Plumbing of buildings, including water and sewerage.

Rooms and Equipment
The third floor of the engineering building is devoted entirely to the work in architecture. There are several rooms
used for architectural design with drafting tables and lockers; a studio for freehand and cast drawing with casts, models and easels; lecture room equipped with lantern and slides and samples of building materials; library containing a large number of volumes on architectural and allied subjects with many valuable plates and complete files of all important art and architectural magazines; and office for instructors.

The office of the professor of architecture and college architect and the blue printing rooms are on the second floor of this building.

BOTANY AND BACTERIOLOGY

Professor Barre

Associate Professor Aull

Associate Professor Rosenkrans

Instructor Rice

BOTANY 1.—General—Semester 1. (Rosenkrans and Rice)

Freshman I, III, IX, XIII: (2 and 4) (To be given Sophomores in 1927-28.)

The structure and functions of the various parts of the higher seed plants, and the broad principles of metabolism, growth, and reproduction are first taken up in detail, followed by a study of the lower organisms.

The student is made familiar with the application of biological laws; and descriptions, life histories and the adaptation of representative organisms are considered. The practical work will consist of laboratory and field studies illustrating the more important phases of the theoretical work.


BOTANY 4—Elements of Forestry—Semester 2. (Rosenkrans)

Sophomore I, IX: (2 and 2)

A lecture course dealing with the general principles of forestry, together with the practical methods applied in lumbering, forest propagation, and conservation.


BOTANY 3—Morphology of the Higher Plants—Semester 1 (Rosenkrans)

Sophomore I, IX, IX, XIII: (2 and 4)

This course considers the general form and structure of the higher plants, and the organs and tissues which compose them. It also
establishes the relationships of the various organs. A study is made of the development of the more complex plants from the simpler ones.


BOTANY 6—Plant Physiology—Semester 2. (Rosenkrans)

Junior I, IX, Elective: (2 and 4)

A study of the structure and functions of plants, the object being to teach the student how plants live and grow and why they are dependent on certain physical factors as light, water, air, etc.


BOTANY 8—Plant Pathology—Semester 2—(Rosenkrans)


A systematic study of fungi with special reference to species causing diseases of economic plants. The students are taught to recognize the more common diseases, particularly in the early stages, and the whole question of prevention and practicable remedies is fully discussed. Methods of isolating, artificially cultivating, and inoculating with disease-causing organisms will be considered.


BACTERIOLOGY 1—General Bacteriology—Semester 1. (Aull)

Junior I; Senior III, IX: (2 and 4)

This course is designed to give the student a clear working knowledge of the bacteria, yeasts, and molds. A detailed study is made of the morphology and physiology of bacteria in relation to man and animals, and to the arts and sciences. The principal bacterial diseases of man are studied and means of control discussed.

In the laboratory bacteria are studied in their relation to food, heat, light, and disinfectants, and their relation and importance to agriculture is stressed. Several forms are studied in detail. This study consists of isolating, growing them upon the various media, staining and determining the organism. Particular attention is paid to types found in water, soil, and milk.


BACTERIOLOGY 2—Dairy Bacteriology—Semester 2. (Aull)

Senior I. Elective: (2 and 4)

Prerequisite: Bacteriology 1.

This course is for students who major in Dairying. The bacteria concerned in the production of milk are emphasized. In the laboratory a careful study of the conditions around the barn and dairy is carried out. Analyses are made of milk, cream, butter, and ice
As far as possible, all the various bacteria found in milk products are isolated and studied in detail. The students prepare their own culture media and stains, and are thus enabled to get a good foundation for future work in bacteriology.

Text-book: Heinemann—"Milk."

BACTERIOLOGY 4—Sanitary Bacteriology—Semester 2. (Aull)

Senior I, III: (2 and 4)
Prerequisite: Bacteriology 1.

This course is designed to meet the needs of those students who specialize in chemistry. A study is made of the location and protection of water supplies, the purification of water, the disposal and purification of sewage, and the isolation of bacteria, particularly pathogenic forms in water.

In the laboratory the students prepare their own media and stains. Bacteriological examinations of water, and sewage are made and a detailed study of the forms found in water and sewage carried out. A careful study is also made of various disinfectants in water purification.


Division Rooms and Equipment

The laboratories and class rooms are located on the first floor of the Agricultural Hall. They contain a good equipment for satisfactory work in botany, forestry, and bacteriology, including sixty compound microscopes, microscope slides, projection apparatus, Spencer rotary microtome, embedding baths, balances, incubators, Arnold, hot air sterilizers, autoclaves, dry ovens. The students have access to a small botanical and bacteriological library.
CHEMISTRY

Professor Brackett
Professor Mitchell
Professor Lippincott
Associate Professor Pollard
Assistant Professor Bender
Assistant Professor Murphy
Instructor Myers

CHEMISTRY 1, 2—General Chemistry—Semesters 1 and 2
(Pollard and Murphy)

Freshmen I, IX. (4 and 2)
Sophomores V, VI, VII, VIII: (2 and 2)

An introduction to chemistry, including the preparation and properties of the common substances, together with the consideration of the fundamental principles of chemical theory. Lecture experiments and laboratory exercises supplement the class work.

Text-books: Holmes' "General Chemistry"; Holmes' "Laboratory Manual of General Chemistry."

CHEMISTRY 1a, 2a.—General Chemistry—Semesters 1 and 2
(Pollard)

Freshmen XIII, III: (3 and 4)

This course is essentially the same as Course 1, 2 above with the addition of extra laboratory practice. The class and laboratory work is arranged to suit the students who are taking the four year Chemistry Course.

Text-books: See Course 1, 2.

CHEMISTRY 1b, 2b—General Chemistry—Semester (1 and 2)
(Pollard and Murphy)

 Sophomores V, VI, VII, VIII: (2 and 2)

Similar to Chemistry 1, 2 but especially adapted to Engineering students. Stress is placed on the phases of Chemistry of special interest and importance to students who expect to take up Engineering courses.

CHEMISTRY 3.—Qualitative Analysis—Semester 1 (Lippincott)

Sophomores III: (0 and 10)

Prerequisites: Chemistry 1, 2, or 1a, 2a.

The properties and reactions of metallic elements and of the common inorganic and organic acids, also the qualitative analysis of a number of solutions and solid mixtures. Part of the time is set aside for theoretical work, during which time special attention is paid to the theory of electrolytic dissociation and the law of mass action.

Text-book: A. A. Noyes' "Qualitative Chemical Analysis."
CHEMISTRY 3a, 4—Quantitative Chemistry—Semester 2,
(Lippincott)
Sophomore III: (0 and 10)
Junior I. (Elective): Semester 1 and 2 (0 and 2.)
Prerequisites: Chemistry 1, 2. or 1a, 2a.
*Absent on leave to study.

The lectures and laboratory instruction are designed to prepare students to understand the mathematical relations, and the fundamental laws of chemistry, and to illustrate the principles involved in both gravimetric and volumetric methods used in elementary analysis.

Text-book: Mahin's "Quantitative Analysis."

CHEMISTRY 5, 6—Organic Chemistry—Semesters 1 and 2.
(Lippincott)
Sophomore III, IX, XIII: (2 and 2)
Junior I. Elective: (2, and 2)
Prerequisites: Chemistry 1, 2 , or 1a, 2a.

A study during the first semester of the underlying principles of organic chemistry; the more common saturated and unsaturated aliphatic hydrocarbons; alcohols and their derivatives and aldehydes and ketones.

The second semester is devoted to the study of amines, polyatomic alcohols; hydroxyacids; carbohydrates; proteins; benzene and some of its homologues and a few of the more important dyes.

The laboratory course involves the preparation and purification of compounds selected from the fatty and aromatic series for the illustration of important synthetic reactions.


CHEMISTRY 7, 8—Physical Chemistry—Semesters 1 and 2.
(Lippincott)
Junior III: (3 and 4)
Prerequisites: Chemistry 1, 2. or 1a, 2a.

A systematic presentation of modern chemical theory in which special attention is paid to the following topics:—gases, liquids, and solids; the theory of solutions; reaction velocity, catalysis and chemical equilibrium; the Phase Rule; colloid chemistry; thermochemistry and elementary electro-chemistry.

The laboratory work involves qualitative and quantitative experiments illustrating the principles of physical chemistry and including practice in performing physical chemical measurements. An important feature of this course is the presentation of detailed reports based upon data obtained in the laboratory.

Text-books: Bigelow's "Physical Chemistry" and Brigg's "Laboratory Outlines in "Physical Chemistry."
CHEMISTRY 9—Quantitative Chemistry—Semester 1 (Mitchell)
Junior III: (0 and 4)
Prerequisite: Chemistry 4.
A continuation of Chemistry involving the analysis of limestone, clay, silicates and the products of some important industrial and metallurgical operations as coal, pig iron, steel, etc. Electrolytic methods and separations.
Text-books: Mahin's "Quantitative Analysis" and other standard reference books.

CHEMISTRY 10.—Gas and Fuel Analysis—Semester 2. (Lippincott)
Junior III: (Elective) (0 and 2)
Prerequisite: Chemistry 4.
This course consists in the analysis of various gases, and mixtures of gases, such as coal gas, flue gas, natural gas, air and others. Also the analysis of various fuels.

CHEMISTRY 11, 12—Organic Chemistry—Semester 1, (Semester 2, Elective.) (Lippincott).
Junior III. (2 and 2)
Prerequisites: Chemistry 5, 6.
A review and extension of chemistry 5, 6, the greater portion of time being given to the study of aromatic compounds.
The laboratory work is more advanced and the greater portion of the time will be devoted to quantitative organic analysis.

CHEMISTRY 13, 14—Agricultural Chemistry—Semesters 1 and 2 (Brackett)
Junior I: (2 and 0, except Group C for semester 1).
Prerequisites: Chemistry 1, 2.
This course is devoted to a study of the composition of plants and a discussion of the sources from which the plant derives its constituent elements.
Text-books: Phillips' "Fundamentals of Organic and Biological Chemistry."; Hart and Tottingham's "General Agricultural Chemistry."

CHEMISTRY 16—Metallurgy—Semester 2, Elective. (Brackett)
Junior III: (4 and 0)
Prerequisites: Chemistry 1, 2.
Physical properties of metals; testing metals; refractories and fluxes; combustion and thermal measurements; fuels; ore dressing; furnaces and accessories; iron ores and metallurgy of iron and steel; copper ores and smelting, extraction and refining of copper; lead ores and metallurgy, and refining of lead; zinc ores and metallurgy of zinc; gold and silver; alloys, their nature and preparation and uses.
Text-books: Wysor's "Metallurgy."; Notes on alloys.
CHEMISTRY 17 — History of Chemistry — Semester 1 (Brackett)
Seniors I (Elective), III, IV: (2 and 0)
Prerequisites: Chemistry 1, 2-5, 6.
The study of the development of the science of chemistry from the earliest times to the present day.
Text-book: Moore's "History of Chemistry."

CHEMISTRY 18 — Stoichiometry — Semester 2. (Mitchell).
Senior I (Elective) and III: (2 and 0)
Prerequisites: Chemistry 1, 2.
A study of chemical equations, the various kinds in use with their meaning and value; different ways of balancing equations, calculations of various kinds involved in chemistry.
Text-book: Ashley's "General Calculations."

CHEMISTRY 19, 20 — Colloid Chemistry — Semesters 1 and 2.
(Pollard)
Senior III.
Prerequisite: Physical chemistry.
The general theory of colloid chemistry, with some of its applications in industrial chemistry, dyeing, photography, ceramics, soils, biology, food, etc.
Text-book: Bancroft "Applied Colloid Chemistry."

CHEMISTRY 21, 22 — Inorganic Chemistry — Semesters 1 and 2.
(Brackett)
Senior I (Elective), III: (2 and 0)
Prerequisite: Chemistry 1 and 2.
A review, extension and continuation of chemistry 1, with special reference to the laws and theories of chemistry, and a study of some of the rarer substances.
Text-book:

CHEMISTRY 23, 24 — Technical Analysis-Thesis — Semesters 1 and 2
(Pollard)
Senior III: Semester 1 (0 and 8); Semester 2 (0 and 8)
Senior I: (Elective): Semesters 1 and 2 (0 and 6)
Prerequisite: Chemistry 4.
The analysis of commercial fertilizers, feeding material, waters, oils, etc. The latter part of the course is devoted to thesis work.

CHEMISTRY 25 — Selected Topics in Chemistry — Semester 2
(Brackett)
Senior I (Elective), III (4 and 0).
Selected topics in inorganic, organic, industrial, agricultural and Sanitary chemistry, to suit the needs of the student.
CHEMISTRY 28.—Advanced Laboratory Practice—Semester 2.

Senior I. (Elective), III (0-4-8). (Mitchell).

Advanced laboratory practice inorganic, organic, agricultural, and sanitary, to suit the needs of the student.

Building and Equipment

Two brick buildings, each about 80 by 50 feet with two stories and a basement, connected on both floors by glass enclosed passages, are devoted to the work of this department. These buildings are steam heated, electrically lighted and well ventilated.

The south building is used almost entirely for academic work. On the first floor are six rooms: a physical chemistry laboratory, a balance room, a qualitative analysis laboratory, for sophomores, a laboratory for organic preparations and analyses for juniors and seniors, an Experiment Station Laboratory, and a small stock room communicating directly with the main stock room in the basement below. On the second floor of this building are three rooms: a laboratory for general chemistry for freshmen and sophomores beginning chemistry, a laboratory of quantitative analysis for juniors and seniors with an adjoining balance room. The laboratories throughout this building are equipped with suitable work tables and hoods fitted with water and gas connections. The basement of this building is divided into a stock room, a storage room and a room for the air pump mixer of the gasoline gas machine which supplies the building.

The north building serves partly for academic and partly for the analytical work of the Fertilizer Analysis Division of the Public State Work of the college. The first floor of this building is all given up to the latter work. There are nine rooms on this floor: one is used as the Director's office; one as a laboratory for water analysis and miscellaneous analytical work; one is used for nitrogen determinations in connection with fertilizer inspection analysis and experiment station work, and adjoining this room is a small room used as an office and balance room by the chemist of the fertilizer control; of the five rooms on the other side of the wide hall extending the full length of the building four are devoted to analysis of fertilizers, two of them being equipped as laboratories for the determination of phosphoric acid, potash and one equipped for either extraction and distillation in connection with the work of experiment station and the analysis of calcium arsenate; one being used as a balance room, and the last as a store room, for fertilizer samples. The laboratories for fertilizer analysis are well equipped for carrying on efficiently a large amount of work simultaneously. The phosphoric acid room has, in addition to the usual equipment, a stirring machine operated by motor for use in volumetric determinations. The potash room contains an electric drying oven. The ammonia laboratory is
CHEMISTRY

equipped with a Durion Kyeldahl digestion apparatus and has facilities for carrying on forty-four digestions and forty-four distillations at the same time, using the Kjeldahl method. On the second floor of this building there are six rooms: two are used as lecture or class rooms, one of which can accommodate about 150 students and the other 49; one room is used as a preparation room in connection with lecture experiments; one is fitted for electro-chemical work; one is used as a chemical library, and an adjoining room as a reading room. The library contains several hundred volumes of standard books, which are partly card indexed according to the most modern system, and the reading room a dozen or more journals devoted to chemistry. The library also contains many valuable pamphlets and bulletins. Both the library and reading room are open to students as well as to members of the Department and to the College Faculty. The basement of this building contains four rooms, one of which is a safe deposit vault for storage of records and other things of value. One of the other three rooms is used as a class room; one for the distillation of water; in one is installed the gas plants, which supply this building and this room is also used as a stock room; and and electrically operated Wiley Mills for grinding feeds etc. is also installed in this room, and the remaining room is used as an assay laboratory.

In addition to the apparatus and chemicals usually found in all well equipped laboratories for qualitative and quantitative analysis, the quantitative laboratory for Juniors and Seniors contains an electric drying oven, and a stirring machine for volumetric phosphoric acid determination, and a motor to run the machine, and also equipment for Kjeldahl nitrogen determinations; the laboratory for physical chemistry is now equipped for the conduct of the experiments in connection with the course as now offered.

CIVIL ENGINEERING

Professor Clarke
Assistant Professor Glenn
Instructor Blandford

CIVIL ENGINEERING 1, 2—Surveying—Semesters 1 and 2.

(Clarke)
Sophomore V. (2 and 4)
Prerequisites: Mathematics 3, 4.

This course is designed to give the student a considerable facility in the theory and use of modern surveying instruments and methods,
including the platting of notes for maps and profiles.

Text-book: Breed and Hosmer’s “Principles and Practice of Surveying.”

CIVIL ENGINEERING 3, 4—Surveying—Semesters 1 and 2.

(S Glenn, Blandford)
Sophomore VI, VII, VIII, Elective IX. (1 and 2)
Prerequisites: Mathematics 3, 4.

This course covers only the more simple and fundamental theory and use of the tape, transit, and level.
Text-book: Breed and Hosmer’s “Principles and Practice of Surveying.”

CIVIL ENGINEERING 5—Railroad Curves and Earthwork—Semester 1.

( Clarke)
Junior V. (3 and 0)
Prerequisites: Civil Engineering 1, 2.

This course covers the theory and solution of problems involving simple, compound and reverse curves; and the special modifications thereof in the use of frogs. Special attention is given to the spiral transition from tangent to curve. The setting of slope-stakes and various problems of computation of earthwork from cross sections and also from contours, are thoroughly covered in this course.

CIVIL ENGINEERING 7-8—Railroad Location—Semester (1 and 2)

( Clarke)
Junior V. (0 and 4)
Prerequisite: Civil Engineering 5.

This course is designed to put in actual practice the theoretical principles covered during the first semester in civil engineering 5. An actual railroad survey is made between two prescribed termini, covering reconnaissance, preliminary survey, and location; the final line is run in with all curves spiraled: the grade is fixed, slope-stakes set and the amount of earthwork and total cost of construction computed.

CIVIL ENGINEERING 10—Strength of Materials—Semester 2.

( Kavanaugh)
Junior II, V. (3 and 0)
Prerequisite: Mechanical Engineering 3.

A study of the various building and structural materials as regards stresses in riveted joints, beams and columns. Particular reference to be given to the analysis of the various stresses in all types of beams.
Text-book: Boyd’s Strength of Materials.”
CIVIL ENGINEERING 12—Graphic Static—Semester 2 (Glenn)  
Junior II, V. (1 and 2)  
Prerequisite: Mechanical Engineering 3.  
A study of the principles of graphic analysis, application of these principles to the determination of stresses in roof and bridge trusses, portals, bents, girders, the three-hinged arch, etc. This course is designed to cover all the common problems of structural design solved by graphics.  
Text-book: Malcolm's "Graphic Statics."

CIVIL ENGINEERING 14—Structural Design—Semester 2.  
(Junior V. (0 and 4)  
Prerequisite: Mechanical Engineering 1, 2.  
This course is devoted for the first half of the semester to a thorough study of built-up sections, riveting, and the design of details; such as joints, bracing, latticing, supports, etc. The second half is devoted entirely to the detail design of either a plate or deck girder.  
Text-Book: Ketchum's "Design of Highway Bridges of Steel, Timber and Concrete.

CIVIL ENGINEERING 16—Bridge Design—Semester 2 (Glenn)  
Senior V. (2 and 2)  
Prerequisites: Civil Engineering 10, 12, 14.  
This course is designed to give the student a general knowledge of the field of bridge engineering along with the practice of working out actual designs. This is accomplished by means of a series of lectures, supplemented by the design by each student of both a concrete and a steel bridge.  
Text-Book: Ketchum's "Design of Highway Bridges of Steel, Timber and Concrete.

CIVIL ENGINEERING 17—Hydraulics—Semester 1. (Clarke)  
Senior V. (2 and 0)  
Prerequisite: Mathematics 6, 7.  
A course covering the principles of the flow of water, with particular reference to the need of knowledge thereof in connection with the study of water supply systems and sewerage.  
Text-book: Daugherty's "Hydraulics."

CIVIL ENGINEERING 18—Hydraulics—Semester 2. (Kavanaugh)  
Senior IV, VI, VII. (2 and 0).  
Prerequisite: Mathematics 6, 7.  
A general course in the fundamental principles governing the flow of water through orifices, weirs, pipes and channels.  
Text-book: Daugherty's "Hydraulics."
CIVIL ENGINEERING 19—Strength of Materials—Semester 1
(Kavanaugh)
Senior VI, VII. (3 and 0)
Prerequisite: Mechanical Engineering 1, 2.
This course is a study of the various building and structural materials and includes; stresses, tension, compression, shear, torsion, riveted joints, beams, and columns. Experimental results are used to illustrate the applications to the actual building in the field.
Text-book: Boyd’s “Strength of Materials.”

CIVIL ENGINEERING 21—Masonry Construction—Semester 1.
(Clarke)
Senior V. (2 and 0)
Prerequisite: Civil Engineering 10, 12.
While this course gives consideration to all kinds of masonry, the most particular attention is directed toward the use of concrete, both plain and reinforced. The subject of foundations is taken up in detail, and the methods used in improving the bearing power of weak soils. Discussion is made of the fundamental principles of design applying to dams, retaining walls, bridge abutments and piers, and arches.
Text-book: Baker’s “Masonry Construction.”

CIVIL ENGINEERING 23—Roads and Pavements—Semester 1.
(Glenn)
Senior V. (3 and 0)
Prerequisites: Civil Engineering 7, 8.
This course consists of a thorough investigation into the merits and disadvantages of all different types and methods of highway construction, from dirt roads up to the highest type of hard surfaced pavement. The details of construction are covered in full, in order in so far as possible to fit the student to enter at once into the highway improvement which at this time engages so much public attention. In addition to the general problem of highway construction, this course also gives attention to the problems of grade and drainage of streets, which especially confront the municipal engineer. Students in this course must also take civil engineering 31, 32.
Text-book: Agg’s “Roads and Pavements.”

CIVIL ENGINEERING 24—Water Supply—Semester 2. (Clarke)
Senior V. (3 and 0)
Prerequisites: Civil Engineering 7, 8, 10, 12, 17.
A course devoted to the engineering procedure necessary to determine the quantity and quality of various sources of water supply; and the method used to improve the quality of unpotable waters;
and the construction of works for the collection of water, and works for the distribution of water.

Text-book: Turneaure and Russell's "Public Water Supplies."

CIVIL ENGINEERING 26—Sewerage and Sewage Disposal—Semester 2. (Clarke)

Senior V. (3 and 0)

Prerequisites: Civil Engineering 7, 8, 10, 12, 17.

A very specific course covering all the points of theory and practice involved in the construction of a modern sewerage system, and the various methods employed to dispose of sewage in accordance with sanitary law.

Text-book: Babbitt's "Sewerage and Sewage Treatment."

CIVIL ENGINEERING 28—Engineering Relations—Semester 2. (Clarke)

Senior V. (1 and 0)

This course covers the general principles of law and ethics involved in the relations of the engineer as principal, agent, or client; and the fundamental legal features involved in the writing of contracts and specifications.

Text-book: Allen's "Business Law for Engineers."

CIVIL ENGINEERING 30—Engineering Investigations and Design—Semester 2. (Clarke).

Senior V. (0 and 4)

Prerequisites: Civil Engineering 21, 23, and registration in C. E. 24, 26.

This is a practical course in conjunction with the theoretical work given during the senior year and gives actual experience in the performance of the necessary investigations and design of structures in all those branches. In masonry; borings are made to ascertain foundations, and designs are made of bridge masonry and arches. In water-supply; a stream is gauged and rated, and the necessary surveys and designs are made for collecting, storage and distributing works. In sewerage; a field survey and actual design are made for a sewerage system for some neighboring town.

Inspection trips away from the college are planned as circumstances favor.

CIVIL ENGINEERING 31, 32—Road Materials Testing Laboratory—Semesters 1 and 2. (Glenn)

Senior V. (0 and 3)

Prerequisites: Civil Engineering 10, and registration or credit in C. E. 23.

In this course the student performs in the laboratory the standard tests of all materials used in highway construction.
This includes tests and analyses of top-soil, bituminous materials, Portland cement, sand, stone, brick, steel, wood, drain-tile, concrete, etc. The latter part of the course is devoted to the actual design, preparation and testing of concrete and bituminous paving mixes, and instruction in the field tests of materials to regulate their quality.

This course in conjunction with civil engineering 23 is designed to fit the student for practical work in the highway engineering field. Text book; Barton and Doane’s “Sampling and Testing of Highway Materials.”

CIVIL ENGINEERING 34—Thesis—Semester 2. (Clarke).

Senior V. (0 and 2)

Every senior, prior to graduation, is required to prepare and submit a thesis. This may be either an original theoretical investigation; or an actual design similar to the work done in courses 16, 30, 31, and 32. The time allotted to this subject represents merely the time devoted thereto under the direct supervision of the instructor. The student is expected to put in much additional individual work.

Division Rooms and Equipment.

The collection of field instruments contains the following:

Two complete transits with solar attachments; six engineer’s transits; four railroad compasses; two six-inch vernier compasses; one precise level; three twenty inch wye levels; four dumpy levels; two architect’s levels; one convertible architect’s level; one drainage level; six Locke hand levels; one binocular hand level; two stadia hand levels, with a supply of self-reading and target rods; two complete plane tables; a Price current meter, with steel boat and truck; sextant; aneroid barometer; flag poles; tapes; chains and all necessary accessories.

The office equipment includes planimeter, slide rules, drafting instruments, and a universal drafting machine.

The road materials laboratory contains full and complete equipment for testing stone, sand, cement, brick, all bituminous materials and top-soil. This equipment includes a Deval abrasion machine; Dorry hardness machine; Page impact machine; diamond drill and saw with grinding lap; ball grinding mill; briquettemaking machines for cementation and tension tests; impact cementation machine; brick rattler; 100,000 pound Olsen universal testing machine for testing stone, brick, cement mortars and concrete in compression; moisture closet; mixing tables; steam bath apparatus; Vicat apparatus; Le Chatelier apparatus; Fairbanks tension briquette testing machine; cement, sand, and stone sieves; Ro-tap shaker; Dulin Rotarex extractor; New York Laboratory type penetrometer; ductility machine; Engler viscosimeter; Freas electric oven; dehydration and distillation apparatus for both
tars and asphalts; analytical balance; flash and burning point apparatus; ring and ball apparatus; float test apparatus; hydrometers; pycnometers; balances; and, all necessary accessories.

The college owns a concrete mixer which is also in the custody of the road materials laboratory, and is used for practical instruction in mixing and placing concrete.

The laboratory for the testing of materials of construction contains the following principal items of equipment: one 100,000 pound Olsen automatic universal vertical testing machine, electrically driven, and designed to test materials in tension, compression, and shear; one 3,000 pound transverse testing machine for determination of the flexural strength of short beams; one 60,000 pound Olsen torsion testing machine; one compression micrometer; one Duplex micrometer extensometer; one deflection instrument and torsion meter.

**DAIRY HUSBANDRY**

Professor LaMaster

Associate Professor Goodale

**DAIRYING 2**—Milk Products, Production and Manufacture—Semester 2. (Goodale)

Junior 1: (2 and 2)

The object of this course is to give the student a knowledge of the production, care and testing of milk and its products; also the Management and feeding of dairy cattle.


**DAIRYING 4**—Dairy Cattle Judging—Semester 2. (LaMaster)

Junior I (Elective): (0 and 2)

A study of the breeds, type and characteristics of dairy cattle with practice in judging and selection of animals for production and exhibition.

**DAIRYING 5, 6**—Dairy Manufacturing—Semester 1 and 2. (Goodale)

Senior 1: Semester 1 (2 and 2) Semester 2 (2 and 4)

Prerequisite: Dairying 2.

This course deals with the problems of market milk and the intensive study of the manufacture of butter, cheese and ice cream.

DAIRYING 7—Creamery Organization and Management—Semester 1 (Goodale)
    Senior 1: (3 and 0) Elective
    Prerequisite: Dairying 2.
    A thorough study of the organization and operations of commercial creameries, creamery accounting, and marketing of dairy products.
    Text-book: “Management of Dairy Plants”—Mortensen

DAIRYING 9—Dairy Cattle Feeding and Management—Semester 1 (LaMaster)
    Senior 1: (2 and 2) Elective.
    Prerequisite: Dairying 2.
    This course is an advanced study of feeds, care, management and development of dairy cattle and methods of milk production.

DAIRYING 10—Dairy Cattle Breeding—Semester 2 (LaMaster)
    Senior 1: (1 and 2) Elective.
    Prerequisites: Dairying 2 and Agronomy 5.
    A study of the practical application of the principles of genetics in its relation to dairy cattle breeding. This will be followed by an extensive study of the leading families and individuals of the major dairy breeds.
    Text-book: To be selected.

DAIRYING 12—Advanced Dairy Farming—Semester 2 (LaMaster)
    Senior 1: (2 and 2) Elective.
    Prerequisite: Dairying 2.
    A study of dairy herds based on milk and feeding records, dairy farming and its relation to soil fertility, and dairy farm management. An advanced course in dairy farming.

Division Rooms and Equipment

The live stock consists of a large herd of registered Jersey cattle, registered Holstein-Friesians, and registered Guernseys.
These cattle are housed in a splendid modern dairy barn with a capacity of one hundred and twenty cows. This barn has the most sanitary equipment throughout.
The dairy laboratories are equipped for milk testing, separator demonstrations, butter making, etc.
The Clemson College Creamery has complete equipment for the making of butter, cheese and ice cream and the cooling and the pasteurization of milk. This creamery is in continuous operation for the entire year, and offers exceptional advantages to students who wish to fit themselves for commercial creamery and ice cream work.
DRAWING
Professor Lee
Associate Professor Klugh
Instructors Harris and Siegler

DRAWING 1—Freehand Drawing—Semester 1. (Harris)
Freshman I, III, IX, XIII. (0 and 2.)
The course is designed, primarily, to assist the student where drawing is needed in his work in agricultural subjects. Proportion and detail are stressed. The course consists in fullsized, enlarged and reduced drawings of irregular shaped objects and in outlining and shading of geometrical figures.

DRAWING 3—Freehand Drawing—Semester 1. (Siegler)
Freshman II. (0 and 2).
This course is the same as the first semester of drawing 5.

DRAWING 5, 6—Freehand Drawing—Semesters 1 and 2. (Harris and Siegler)
Freshman V, VI, VII, VIII, XI. (0 and 2).
A course, designed to meet the needs of the engineer, who must express himself in the clearest and quickest way to workmen under his charge.
During the first semester the student gets a thorough drill in the principles of perspective. The second semester is devoted to drawing machine parts, particular attention being given to the development of the imagination.
The first semester is prerequisite to the second.

DRAWING 8—Mechanical Drawing—Semester 2. (Klugh and Harris)
Freshman I, III, IX, XIII, (0 and 2)
Lettering, exercises in the uses of instruments, orthographic projection, scale drawings from the text; design of a small farm building, tracing and blue printing.

DRAWING 9, 10—Mechanical Drawing—Semesters 1 and 2. (Klugh and Harris)
Freshman V, VI, VII, VIII, (0 and 2)
Exercises in the use of instruments and in applied geometry; Reinhardt lettering; conventional use of lines; orthographic projection; scale working drawings from the text; finding other views of objects from given views; working drawings from sketches; working drawings from parts of machines; assembled views from working drawings of parts; tracing; blueprinting.
The first semester is prerequisite to the second.
DRAWING 11—Mechanical Drawing—Semester 1. (Klugh)
Freshman II. (0 and 2)
Same as first semester Drawing 9, drawing of details of buildings.

DRAWING 13—Descriptive Geometry—Semester 1. (Klugh)
Sophomore V, VI, VII, VIII. (0 and 2)
Prequisites: Drawing 6, 8.
Study and delineation of projections of points, lines, plane surfaces and solids, and their various relations; tangencies, intersections, and developments under normal and sub-normal conditions; original exercises required to illustrate topics under consideration.
Text-book: Smiths "Practical Descriptive Geometry."

DRAWING 14—Mechanical Drawing—Semester 2. (Klugh)
Sophomore VI, VII, VIII. (0 and 2)
Prerequisites: Drawing 6, 10, 13.
Continuation of work in Drawing 10 in orthographic projection; intersection and development problems, showing relation of plan and elevation to developed surfaces, isometric and perspective drawing; working drawings from machines or parts of machines from sketches and specifications. Elementary principles of machine design. Tracing and blue printing.

DRAWING 16—Structural Drawing—Semester 2. (Klugh)
Sophomore V. (0 and 2)
Prerequisites: Drawing 6, 10, 13.
Study of structural symbols and elementary structural design. Reading of structural drawings; tracing and blue printing.

DRAWING 17, 18—Machine Design—Semesters 1 and 2. (Klugh)
Junior VI, VII. (0 and 3).
Prerequisite: Drawing 14.
One hour each week is devoted to the study of the theory of spur, bevel, and screw gearing; lobed and elliptic wheels; epicyclic trains; ratchet motions; link motions; quick return motions; and cam motions. A series of lectures covering some of the practical problems of engineering is given in connection with this course.
Two hours each week are devoted to practical problems illustrating the principles studied, to working drawings in design, and to tracing and blue printing.
Text-books: Keown's "Mechanism", French's "Engineering Drawing."
Rooms and Equipment

The division of architecture and drawing is located on the second and third floors of the engineering building.

On the second floor are several large rooms devoted to freehand drawing and engineering drafting and design; a locker room; office for the head of the division and three blue print rooms equipped for printing by sun and electricity. A 42-inch Pease automatic printing, washing and drying blue-print machine is installed in one of these rooms. The rooms are equipped with drafting tables, individual lockers, plaster casts, parts of machines useful in design and blue prints.

Each student is required to own a complete outfit of drawing tools, such as a set of instruments, board, T-square, and other material. This outfit must be first-class in every respect, must be approved by the instructor in charge, and no second-hand or inferior tools will be permitted to be used by an engineering student; the agricultural freshman, however, may use the cheaper instruments. Students are incapable of judging drawing instruments and make a mistake in buying low-priced instruments which appear to be of good quality, but are inferior and will not give good service, soon necessitating the purchase of another set. Students are advised to buy these tools at the Cadet Exchange where they can see samples and make selections. On account of the large number of sets of instruments bought by the college each year, a very large discount is obtained and given to the student. The more expensive and less used instruments are kept in the office for the use of students needing them.

ECONOMICS AND SOCIOLOGY

Professor Brearley

ECONOMICS AND SOCIOLOGY 1 —Economics —Semester 1 (Brearley)

All seniors: (2 and 0)

This is an elementary course in descriptive economics and is designed to introduce the student to modern business conditions and practices. Among the topics considered are risk-taking, money, banking, business cycles, foreign trade supply and demand, etc.


ECONOMICS AND SOCIOLOGY 2 —Sociology —Semester 2 (Brearley)

All Seniors: (2 and 0)

This course is a study of the elementary principles of sociology
and of some of the special social problems, considered in the light of general principles.


ECONOMICS AND SOCIOLOGY 3, 4—Psychology—Semester 1 and 2 (Brearley)
Elective: All courses (2 and 0)
An introductory course in general psychology, emphasizing the study of the nervous system, the psychology of learning, and selected problems in social psychology. This course is especially valuable for students taking advanced work in social science or education.

ECONOMICS AND SOCIOLOGY 6—Introduction to Psychology—Semester 2 (Brearley)
Elective: Seniors, all courses (2 and 0)
This course will endeavor to give a summary of the essentials of elementary psychology. The contributions of psychology to the understanding of "human nature" will be stressed.

EDUCATION
Professor Crandall
Associate Professor Washington
Assistant Professor Ayers
Assistant Professor Tate
Assistant Professor McLean

Undergraduate Courses

Undergraduate courses in Education are offered to aid persons in preparing for the following general types of positions:
1.—Teachers of Agriculture.
2.—Teachers of Trades and Industries.
3.—Teachers of Science, Mathematics, and other high school subjects.
4.—Teachers of Shop Work.
The following sequences of courses are planned to train men for these positions:
Teachers of Agriculture—Agricultural Education 1, 2, 3, 4, 6.
Teachers of Trades and Industries—Industrial Education 5, 7, 8, 10, 12.
Teachers of high school subjects—Education 9, 11, 14, 16, 18.
Teachers of Shop Work—Education 5, 8, 10, 13, 20.
EDUCATION 1—Agricultural Education—Semester 1. (Crandall)

Junior I. Elective; (1 and 4)

The principal purpose of this course is to familiarize students with the work of teachers of Agriculture in local communities. Students observe and report on the work of all-day, part-time, evening and day unit classes; and community and promotional work; equipment and general organization of a program in Agricultural Education for a local community. Students are expected to spend two afternoons each week in the practice departments.

EDUCATION 2—Agricultural Education 2—Educational Psychology

—Semester 2. (Washington)

Junior I. Elective; (2 and 2)

Study of the learning process in terms of situation, bond, response; how to study; effect of attitude, feelings and method on the learning process; how to remember; value of recognition and proper control of instincts in formulating educational programs; habit formation; individual differences as affecting educational and vocational performances; the psychology involved in the interview and in personality as affecting development of teachers as vocational and educational leaders. Special attention is given to the study of mental ability, attitude, interests, and aptitudes of the groups affected by education in its various phases.

EDUCATION 3—Agricultural Education—Semester 1. (Crandall)

Senior I. Elective; (2 and 4)

In this course emphasis is placed on the participation of students in all possible phases of the work of a teacher of agriculture in a local community. Students participate in organizing and conducting all-day, part-time, evening and day unit classes. Students are held responsible for definite phases of community and promotional work. Instruction in principles and methods of teaching is given in connection with student’s participation. Students are expected to spend two afternoons each week in the practice departments.

EDUCATION 4—Agricultural Education—Semester 2. (Crandall, Ayers, McLean)

Senior 1 Elective; (0 and 10)

Each student is required to assume the work and responsibility of a teacher of agriculture in a local community. Students are expected to organize and conduct part time, evening class, and day unit courses in addition to the all-day program. Students are to spend five afternoons each week in the practice departments.
EDUCATION 5—Industrial Education—Semester 1. (Crandall)
Junior VI, VII, VIII A, (1 and 4)
This is an introductory course required of all students pursuing Industrial Education. The chief purpose of this course is to orient the students in the field of Industrial Education. Special emphasis will be placed on familiarizing the students with the needs for vocational education in trades and industries in South Carolina. Students are expected to spend from one to two afternoons each week in the practic departments and visiting schools and classes in the State.

EDUCATION 6—Agricultural Education—Semester 2. (Crandall)
Senior 1. Elective; (3 and 0)
The developing of teaching material in vocational agriculture receives special emphasis in this course. Students are expected to make careful analyses of conditions and practices of farming in a local community as one of the chief sources of subject matter.

EDUCATION 7—Industrial Education—Semester 1. (Washington)
Senior VIII. A. (0 and 10)
Study of educational needs of textile employees, job analysis of certain jobs in cotton mill, study of mill as a whole, construction of courses to be taught in vocational classes and schools. Students are to spend one full day each week in mills and schools.

EDUCATION 8—Industrial Education—Educational Psychology—Semester 2. (Washington)
Junior VI, VII, VIII A. (2 and 2)
See Agricultural Education 2—Educational Psychology.

EDUCATION 9—Introduction to Education—Semester 1. (Crandall)
Junior IX. Elective; (1 and 4)
A general introductory course required of all students majoring in Education. This course takes up a survey of the general field of Education for the purpose of giving the student a background for more specialized courses in Education.

EDUCATION 10—Industrial Education—Semester 2. (Crandall)
Senior VI, VII, VIII A, (3 and 0)
Special emphasis is placed in this course on the teaching of problems in the trades and industries in South Carolina. Such topics as the project method of teaching, lesson types, teaching exercises, type studies, and lesson planning are studied in this course.
EDUCATION 11—Special Methods in Teaching High School Subjects—Semester 1. (Washington)
Senior IX. Elective; (2 and 4)

Among the topics to be considered are the objectives of different high school subjects, course building, methods of evaluating instruction in high school subjects, comparative study of textbooks and laboratory manuals, and the adaptation of high school courses to local conditions.

EDUCATION 12—Industrial Education—Semester 2. (Crandall)
Washington and Tate
Senior VIII A. (0 and 10)

Students who pursue the curriculum in Industrial Education are required to observe and teach in evening and part-time classes in trades and industries. Students are expected to organize part-time, general continuation, and evening classes in addition to the work in connection with the all-day program. Students are to spend five afternoons each week in the practice departments.

EDUCATION 13—Curriculum Building—Semester 1. (Washington)
Senior VI, VII. (3 and 2)

This course is planned for students taking mechanical, electrical or shop courses. It is designed to aid the students in analyzing certain trades with the view of formulating courses of study in those trades.

EDUCATION 14—Educational Psychology—Semester 2. (Washington)
Junior IX. (2 and 2)

See Agriculture Education 2—Educational Psychology.

EDUCATION 16—Principles of Teaching—Semester 2. (Crandall)
Senior IX. Elective; (3 and 0)

This is a course treating of the principles of teaching high school subjects. Such topics as the project method of teaching; lesson types; teaching exercises—recitation, laboratory, supervised study, demonstration, field trip; examinations; type studies; and lesson planning, are studied in this course.

EDUCATION 18—Practice Teaching—Semester 2. (Crandall and Washington)
Senior IX. Elective; (0 and 10)

This course is required of all students in General Science who elect a major in Education. Students in General Science observe and teach in high school departments in public schools located near the College.

EDUCATION 20—Industrial Education—Semester 2. (Washington)
Senior VI, VII. (0 and 10)

See Education 12—Industrial Education.
Graduate Courses

Graduate courses are offered in Education to aid persons preparing for or engaged in the following types of positions:
1. Teachers, principals, and superintendents of public schools.
2. Instructors in colleges and universities.
3. Teachers of agriculture.
4. County superintendents and other people interested in administrative and supervisory work.
5. Teachers of trades and industries.

EDUCATION 201—Advanced Educational Psychology—Semester 1.  (Washington)
(3 and 0)
Prerequisite: Education 5.
The following topics will be discussed: Instincts, reasoning, imitation, suggestion, motivation, drill work, transfer of training, and the physiological aspects of psychology.

EDUCATION 202—Statistical Methods Applied to Education—Semester 2.  (Crandall)
(3 and 0)
The statistical methods commonly applied in the interpretation of educational data are studied in this course.

EDUCATION 203—Tests and Measurements—Semester 1.  (Washington)
(3 and 0)
This course will include a general survey of the scope and purpose of intelligence and educational tests. In addition to furnishing experience in the use of tests, the following topics will be studied: Construction of tests, quality of scales, derived scores, improving examinations, statistical methods, uses of tests in vocational and educational guidance.

EDUCATION 204—Principles of Teaching—Semester 2.  (Crandall)
(3 and 0)
Prerequisite: Education 7.
The fundamental aims of good teaching, the problem-project method of teaching, job analysis as an aid in teaching, and the technique of teaching involved in the solution of a problem are some of the topics treated in this course.

EDUCATION 205—Secondary Education—Semester 1.  (Crandall)
(3 and 0)
The aims of secondary education, secondary-school population, curricula of the secondary schools, and the junior high school are among the topics considered in this course.
EDUCATION 206—Public School Administration and Supervision
Semester 2. (Washington)
(3 and 0)

The public school district and its limitations; the county units of school administration and supervision; the possibility of the natural community in administering and supervising public education; the authority and function of the state in administering and supervising public education; factors affecting consolidation; participation of the Federal government in public education; methods of financing public schools; bases of distributing public school funds, are the topics discussed in this course.

EDUCATION 207—High School Administration—Semester 1. (Crandall)
(3 and 0)

High school superintendents and principals should find this a profitable course. Among the topics to be considered are the school plant including buildings, supplies, and equipment; the teaching corps its selection, supervision, promotion and dismissal; curricula and courses of study; the program of studies; classification and promotion of pupils; guidance of pupils; extra-curricular activities; administration and supervision of mental and educational tests; records and reports; and accrediting high school work.

EDUCATION 208—Seminar. (Crandall and Washington)
Credit hours are to be determined by the work done by the student.

Seminars may be arranged by students for graduate work in special phases of Education.

ELECTRICAL ENGINEERING
Professor Dargan
Professor Rhodes
Instructor Wilson

ELECTRICAL ENGINEERING 1—Electrical Engineering—Semester 1. (Rhodes and Wilson)
Juniors VI, VII. (3 and 3)
Prerequisites: Mathematics 6; Physics 5, 6.

A study of electric and magnetic circuits, including fundamental laws for both direct and alternating current and the construction, operation and standard methods of testing electrical measuring instruments.

ELECTRICAL ENGINEERING 2—Electrical Engineering—Semester 2. (Rhodes and Wilson)
Junior VI, VII. (3 and 3)
Prerequisite: Electrical Engineering 1.
A continuation of electrical engineering 1 with an introduction to direct current generators and motors.

ELECTRICAL ENGINEERING 3—Electrical Engineering—Semester 1. (Dargan).
Senior VI. (5 and 4)
Prerequisites: Electrical Engineering 2, Mathematics 7, Mechanical Engineering 1, 2.
A study of direct and alternating current dynamos and equipments including fundamental laws, construction, operation and testing.

ELECTRICAL ENGINEERING 4—Electrical Engineering—Semester 2. (Dargan and Wilson)
Senior VI. (5 and 5)
Prerequisite: Electrical Engineering 3.
A continuation of electrical engineering 3 with a brief introduction to the study of generation, transmission, distribution and utilization of electrical energy.
Text-books: Same as for electrical engineering 3.

ELECTRICAL ENGINEERING 5—Electrical Engineering—Semester 1. (Dargan and Rhodes)
Senior VII. (3 and 2)
Prerequisites: Electrical Engineering 2, Mathematics 7, Mechanical Engineering 1, 2
Similar to electrical engineering 3, but arranged for mechanical engineering students.
Text-books: Dawes' "Electrical Engineering," Vols. I and II.

ELECTRICAL ENGINEERING 6—Electrical Engineering—Semester 2. (Dargan and Rhodes)
Senior VII. (3 and 2)
Prerequisite: Electrical Engineering 5.
Similar to electrical engineering 4, but arranged for mechanical engineering students.
Text-books: Dawes' "Electrical Engineering" Vol. II.
ELECTRICAL ENGINEERING 7—Electrical Engineering—Semester 1. (Wilson)
Senior III, V, VIII, VIII(a), (2 and 2)
Prerequisites: Mathematics 6; Physics 5, 6
A brief course covering fundamental principles and tests of the more important electrical equipment and applications.
Text-book: Gray's "Principles and Practice of Electrical Engineering."

ELECTRICAL ENGINEERING 9—Design—Semester 1. (Rhodes)
Senior VII. (0 and 2)
Prerequisites: Drawing 18; Electrical Engineering 2.
An analytical and graphical study of the principles of construction of electrical machinery through a series of problems in design. Students in this subject must also take electrical engineering 5.

ELECTRICAL ENGINEERING 10—Design—Semester 2. (Rhodes)
Senior VI. (0 and 2)
Prerequisites: Electrical Engineering 3; Drawing 2.
Similar to electrical engineering 8 but arranged for electrical engineering students. Students in this subject must also take electrical engineering 4.

Division Rooms and Equipment.

Electrical Instrument Laboratory. The electrical division occupies two single-story brick buildings and includes in its equipment the following instruments and apparatus: Leeds and Northrup potentiometer, with certified standard resistances for measuring both current and potential; Kelvin deka-ampere balance; Weston laboratory standard voltmeter with multipliers; two motor-generator sets; three small motors; fourteen galvanometers; fifteen standard resistance sets; three standard resistance and Wheatstone bridge sets; dial decade standard test set; four meter-wire bridges; four standard condensers; commercial condensers: Weston standard cells; ammeters; voltmeters; rheostats; key switches; storage cells; primary cells, and other miscellaneous apparatus; also a quantity of special apparatus made in the college shops and laboratories.

Dynamo Laboratory. The lecture room has raised seats, and is equipped with instruments, illustration models, and other demonstration apparatus.
This laboratory equipment includes the following:

Voltmeters: twelve Weston, six General Electric Co. Thomson, one Jewell, one Whitney, one Ayrton and Perry, one Hoyt, one Kelvin electrostatic, one Cardew.

Ammeters: Eight Weston, six Weston millivoltmeters with current shunts, twelve General Electric Co. Thomson, one General Electric Co. hot wire, one Westinghouse portable, one Siemens electro-dynamometer, one Jewell.


Miscellaneous Instruments: Tachometers, speed counters, stop watches, current and potential transformers for instruments, frequency meters, etc.


Alternating Current Apparatus: One 15 kva. General Electric Company single, two, three and six phase revolving field generator, complete with marble switch board and full set of indicating instruments; one 7 1-2 kva. General Electric Company single, two and three phase rotary converter; two 15 kva revolving field synchronous alternators, also one squirrel cage rotor with starting compensator and one phase wound rotor with drum controller and resistor; five General Electric Company single, two and three phase induction motors; one Wagner three phase induction motor; one Wagner repulsion induction motor; three 3 kva and three 5 kva constant potential transformers; one constant current transformer; two 5 kva Scott transformers; General Electric Company condensers and assortment of coils, models, etc.

Miscellaneous: 3-ton portable crane, prony brake, rheostats, drum controllers, circuit breakers, switches, fuse testing apparatus, lightning arresters; etc.
ENGLISH

Professor Daniel
Professor Bradley
Assistant Professor Lane

Instructors—Moffatt, Kinard, Rankin, Epting

ENGLISH 1, 2—Composition and American Literature—Semesters 1 and 2. Lane, Moffatt, Kinard, Setzler.

Freshman: All courses: (3 and 0)

This course, while it presupposes a knowledge of English grammar and syntax, gives a review of the subject and, in addition, a course in composition and rhetoric, embracing punctuation, the sentence, diction, and letter writing. Students are taught the use of dictionaries, encyclopedias, and other reference books.

American Literature. One period a week is given to the study of American literature. The historic development, the influences that gave distinctive characteristics to the literature of each period, the lives of the chief writers, a critical study of selections from each and a class-room reading of many other selections make up the principal work of the course.

Supplementary Reading. A supplementary reading course embracing some of the best works of the leading American authors is required, and written reports are made upon these. Every effort is made to inspire the student with a love for good literature, and special inducements are offered to those who do reading in addition to that required.

Text-books: "Composition for College Students"—Thomas, Manchester, Scott; "Century Handbook of Writing"—"Three Centuries of American Poetry and Prose"—Newcomer-Andrews-Hall; Webster's "Secondary School Dictionary" or a book of higher grade; and ten or more selections from American Literature.

ENGLISH 3, 4—Rhetoric and English Literature—Semesters 1 and 2. (Bradley, Lane and Kinard)

Sophomore: All courses: (3 and 0)

Prerequisites: English 1, 2.

The work of the first semester comprises a study of the whole composition, the development of the paragraph, a review of punctuation, and a careful study of the grammatical and rhetorical construction of the sentences. The work of the second semester takes up the consideration of the kinds of writing, giving special attention
to exposition and description. Many of the themes are discussed in class, and consultations are held with students for individual discussion.

Text-books: "English Composition"—Greenough and Hersey; "Century Handbook of Writing."

Two periods a week throughout the session.

English Literature. The work in English literature comprises a general historic survey of English literature from the Anglo-Saxon period to the Victorian Age. It makes a class-room study of one or more selections from representative authors of each period, and requires parallel reading from other writers. The selections—made from ballads, different forms of poetry, the drama, prose fiction, and the essay—illustrate the stages of the development of the literature. Parallel readings are assigned on which both oral and written reports are required.

Text-books: "Twelve Centuries of English Poetry and Prose" by Newcomer and Andrews; Long's "English Literature"; Webster's "Secondary School Dictionary" or one of higher grade.

One period a week throughout the session.

ENGLISH 5, 6—Technical Writing, Public Speaking, Argumentation—Semesters 1 and 2—(Daniel and Bradley).

Junior: All courses: (2 and 0)
Prerequisites: English 3, 4.

Technical Writing—(Bradley)—A text-book on technical writing is used as a foundation and guide for the work. Students are required to make reports on experiments, to submit plans for construction, to draw specifications and contracts, and to make reports of investigations. Specimens of technical writing are analyzed and studied as models.


One period a week for first and second semesters.

Public Speaking—(Daniel)—In this course in public speaking a text-book is used for a study of the theory of the subject, but most of the work is practical, stressing correct pronunciation, clear enunciation, and direct natural delivery. Selections are memorized for practice. Original speeches are prepared and delivered. Extemporaneous speaking is required.


One period a week for the first semester.

Argumentation—(Daniel)—In the course in argumentation instruction is given in selecting, stating, and defining questions for debate, in securing and testing evidence, in making briefs, and in presenting the argument. Models are used for guidance, but original briefs and arguments are required.

Text-book: Foster's "Argumentation and Debating."

One period a week for the second semester.
ENGLISH 7, 8—Journalism, Dramatic Literature—Semesters 1 and 2. (Daniel)

Senior: Elective: (2 and 0)
Prerequisites: English 5, 6

Journalism: Text-books are used as the basis of the course in Journalism which is designed to train students in the preparation of technical articles for the general reader and to help those who expect to become leaders in industrial and economic life to do occasional writing for newspapers and other publications.

Text-books: “Special Feature Articles”—Bleyer; “Newspaper Editing and Writing”—Bleyer.

Two periods a week for the first semester.

Dramatic Literature. The course in dramatic literature gives a brief survey of the development of the drama followed by a study of some of Shakespere’s plays and a modern play. Some time is also devoted to a study of present day literature. Occasional papers are required.

Text-books: To be selected.

Two periods a week for the second semester.

ENGLISH 11—Business Law—Semester 1. (Daniel)
Junior: Non R. O. T. C. (2 and 0)

The course in business law seeks to fix legal principles in the student’s mind, to lead him to realize the limitations of the legal knowledge of the layman, to give definite ideas as to how laws operate in actual practice, to prepare him to carry on business transactions with such care that he may avoid legal difficulties.

The course begins with a brief survey of the origin, purpose and development of laws; then takes up a study of contracts, sales, agency, negotiable instruments, partnership, corporations, personal, property, and real property.

Problems from actual cases are discussed in class, the students taking opposing sides. Contracts, notes, mortgages, checks and other papers are written and discussed.


GEOLOGY AND MINERALOGY

Professor Calhoun.

GEOLOGY 1, 2—Agricultural Geology—Semesters 1 and 2. (Calhoun).

Sophomore I: Semester 1 (3 and 0); Semester 2 (0 and 2)

In this course geology is considered in its practical relation to agriculture. The student becomes familiar with the soil-making rocks and minerals, the influence of the various mineral constituents in rocks on the texture of soil, the natural mineral fertilizers,
and the formation of soils from rocks. The question of the relation of underground water to wells, springs, artesian wells, to drainage problems, and to soil water is studied. The classes of soils derived from rivers, wind action, and glacier deposits are taken up. The principles and methods of making soil maps are explained. Topographical and geological maps are studied chiefly with reference to agricultural problems.

Text-book: "Agricultural Geology"—Emerson

GEOLOGY 3—Engineering Geology—Semester 1. (Calhoun)

Junior V: (2 and 0)

A brief course in which the practical application of geology to engineering is emphasized. Topographical and geological maps are used in connection with the text book.


GEOLOGY 5, 6—Chemical Geology—Semesters 1 and 2. (Calhoun)

Senior III: (2 and 0)

In this course structural geology, the theory of ore deposits, and the economic side of geology are emphasized. Special stress is laid upon the action of underground water in forming ores and veins. The theories of the formation of various classes of rocks are considered and special attention is given to that side of historical geology which enables the chemists to recognize certain horizons which carry minerals and ores of economic importance.


GEOLOGY 7, 8—Mineralogy—Semesters 1 and 2. (Calhoun)

Junior III, Senior I, IX, Elective: (2 and 2)

A comprehensive course in crystallography, physical, and chemical mineralogy, and systematic, descriptive and determinative mineralogy. Crystallography is taught by lectures and text book, with laboratory work based on the collection of models and natural crystals; also physical, optical, and chemical properties of minerals, and descriptive mineralogy covering the more important species. Much of the laboratory work is devoted to the determination of minerals by means of their physical and chemical properties, by comparison with labeled specimens of the systematic collection, and by the use of unlabeled collections for practice in identifying minerals at sight. This course gives a sufficient knowledge of mineralogy for the geologist, metallurgist, mining engineer, or chemist and will enable the student to identify readily all but the rarer minerals.

GEOLOGY 10—Meteorology—Semester 2. (Calhoun)
Senior I, IX, Elective: (2 and 0)
  Junior, All Courses Non R. O. T. C. (2 and 0)
A course designed to give the student an adequate conception of the use of meteorological instruments, weather maps, and the general principles of meteorology and climatology as applied to the growing of crops.

Division Rooms and Equipment
The Division of Geology and Mineralogy occupies three rooms on the second floor of the Agricultural Building.
The systematic collections contain about 500 labeled specimens of rocks, minerals, and fossils. These are exhibited in the laboratory, and are available to students and the public. There is also an unlabeled collection of minerals for practice in identifying species at sight, and unlabeled collections of the most important minerals are provided for determinative work in the laboratory.
The laboratory is supplied with water, gas and all apparatus and reagents necessary for the determination of minerals by means of their chemical and physical properties.
The class room is supplied with large physical wall maps of the world and of all continents, an 18-inch terrestrial globe, a 20-inch relief globe, a set of geological and geographical relief models, and lantern slides, stereographs, and photographs.

HISTORY
Professor Holmes

HISTORY 1—American Government—Semester 1—(Holmes, Brearley and Epting)
Freshman: All Courses: (3 and 0)
This course presupposes familiarity with the elementary principles of civics as given in the high schools.
The course develops the historical background of our government, traces the growth of the Constitution, describes the actual workings of the various elements of our government, and gives special attention to the defects of our system and to suggested remedies.
A supplementary reading course embracing the standard works on American government is required, and written reports are made upon these.
(new edition)
HISTORY 2—Modern and Contemporary History—Semester 2—
(Holmes, Brearley and Epting)
Freshman: All courses: (3 and 0)
This course requires an intensive study of European history during the nineteenth and twentieth centuries. Emphasis is laid on the social and economic changes, on the development of nationalism and democracy, on economic imperialism, on the causes and results of the World War and on world relations.
A feature of the course is the assignment of simple problems to students, who are required to find sources of material and to make written or oral reports of their reading.
Text-book: Schapiro's "Modern and Contemporary European History."

HISTORY 3—American Economic History—Semesters (1 and 2)
(Holmes)
Freshman: General Science Course: (3 and 0)
This course develops the economic background of Colonization, the Revolution, the Constitution, wars, public lands, agriculture and industry.
Text-book: To be selected.

HORTICULTURE
Professor Newman
Assistant Professor Hoffman

HORTICULTURE 1—Fruit Growing—Semester 1... (Hoffmann)
Junior 1: (2 and 2).
General study of fruits with particular reference to the home orchard sites, soils, propagation, planting, pruning, spraying, and varieties.
Text-book: "Productive Orcharding"—Sears
Required equipment—One pair hand pruning shears and 1 budding knife.

HORTICULTURE 2.—Vegetable Gardening—Semester 2. (Hoffmann)
Junior 1: (1 and 2.)
Principles and practices relative to the production of vegetables for home use. Construction and management of cold frames and hotbeds. Practical work in planting and caring for a garden.
Text-book: "Vegetable Gardening"—Watts.
HORTICULTURE 3—Systematic Pomology and Small Fruits—
   Semester 1. (Hoffmann)
   Senior I, Elective: (2 and 2)
   Systematic Pomology—1st half 1st semester.
   Small Fruits—2nd half 1st semester.

   Systematic includes the classification, description, and nomen-
   cature of native and sub-tropical fruits; identification with ref-
   erence to relationship and natural classification of varieties and
   judging and displaying fruits.
   Text-book: "Systematic Pomology"—Hendrick
   Small Fruits includes the propagation, culture, harvesting, and
   marketing of the blackberry, dewberry, grape, raspberry, straw-
   berry, and other small fruits.

HORTICULTURE 4—Commercial Pomology—Semester 2. (Hoff-
   mann)
   Senior I. Elective: (2 and 2)

   Commercial Pomology will deal with practical problems pretain-
   ing to fruit growing; establishment and management of large com-
   mercial orchards, inter-cropping, cover crops, marketing, etc. Com-
   mercial orchards visited.
   Supplimented by lectures and assigned readings.

   Required equipment: One pair pruning shears, saw, and budding
   knife.

HORTICULTURE 6—Landscape Gardening—Semester 2 (New-
   man)
   Senior 1 Elective: (2 and 2)

   A study of the principles of landscape art with reference to
   the improvement of home and school grounds and park areas.
   Mapping, designing and a study of decorative plants, their indenti-
   fication and adaptation to landscape work.

HORTICULTURE 7, 8—Truck and Market Gardening—Semester 1
   and 2 (Hoffmann)
   Senior 1 Elective: (2 and 2)

   Principles and practices of commercial vegetable growing on a
   large scale as well as forcing crops in the greenhouse and in
   frames. Special attention is given to the trucking practices in
   this State, with particular reference to the development and
   management of truck farms and market gardens, planting, culti-
   vation, fertilization, harvesting, grading, and marketing. This
   course combines both systematic and commercial study. Commer-
   cial sections visited.
   Text-book: "Vegetable Forcing"—Watts.
   Supplimented by lectures and assigned readings.
   (To be adopted later)
HORTICULTURE 9 — Plant Propagation and Nursery Management — Semester 1. (Newman)
Senior 1 Elective: (2 and 2)
This course includes the study of methods of propagating fruit trees, shrubs and the various kinds of flowering plants. The student is given practical instruction in the propagation of these plants in the field as well as in the greenhouse. The nursery consists of plantings of various kinds of deciduous and evergreen shrubs as well as the pome and stone fruits.

HORTICULTURE 10 — Thesis.—Semesters 1 and 2.
Senior 1.
Special subject requiring independent investigations by students specializing in Horticulture. Results submitted in written form.

Division Rooms and Equipment
The division is well equipped with orchards, greenhouses, gardens, and vineyards. The facilities for instructional purposes include ample lecture rooms laboratories, and practice workhouses thereby making it possible for the division to offer students excellent opportunities for pursuing a course in Horticulture.

MATHEMATICS
Professor Martin
Professor Shanklin
Associate Professor Hunter
Assistant Professor Johnstone
Instructor Reed
Instructor Fitzpatrick

MATHEMATICS 1—Plane Trigonometry—Semester 1—(Shanklin)
Freshman: I, IX, Elective: (3 and 0)
Prerequisite: Algebra through quadratics, Plane Geometry.
This course covers plane trigonometry.
Text-book: Crenshaw and Derr, "Plane Trigonometry".

MATHEMATICS 2—Mathematics for Agriculture and General Science—Semester 2. (Shanklin)
Freshman: I, IX, Elective:
Prerequisite: Mathematics 1.
This course embraces the study of graphical representations of statistical data, statistics, small errors, conic sections, empirical equations, progressions, annuities, averages and correlations.
MATHEMATICS 3—Plane Trigonometry—Semester 1—(Reed, Fitzpatrick, Johnstone)
Freshman: II, V, VI, VII, VIII: (5 and 0)
Prerequisite: Algebra through quadratics, Plane Geometry.
This course covers plane trigonometry, supplemented by numerous related problems and exercises.
Text-book: Crenshaw and Derr, "Plane Trigonometry".

MATHEMATICS 4—College Algebra—Semester 2—(Martin, Reed, Fitzpatrick, Hunter, Johnstone)
This course embraces a thorough drill in advanced algebra with especial emphasis on the subjects which come up in the subsequent courses in mathematics.
Text-book: Fite's "College Algebra."

MATHEMATICS 5—Analytic Geometry—Semester 1. (Martin, Johnstone, Hunter)
Sophomores: II, III, V, VI, VII, VIII, IX: (4 and 0)
Prerequisite: Mathematics 3, 4.
This course comprises a study of cartesian and polar systems of coordinates, discussion and construction of loci, the straight line, transformation of coordinates, the circle, parabola, ellipse, hyperbola, general equation of second degree involving two variables, tangents and normals, higher plane curves, equation of the plane, the straight line in space, and surfaces of the second order.

MATHEMATICS 6—Differential Calculus—Semester 2—(Martin, Johnstone, Hunter)
Sophomores: II, III, V, VI, VII, VIII, IX: (4 and 0)
Prerequisite: Mathematics 5.
A study of the differentiation of algebraic and transcendental functions, successive differentiation and development of functions, functions of two variables, tangents, normals, and asymptotes, applications of the derivative in mechanics.

MATHEMATICS 7—Integral Calculus—Semester 1. (Martin, Hunter).
Prerequisite: Mathematics 6.
This course in integral calculus gives instruction in elementary forms of integration, integration of rational fractions, the definite integral, successive reductions, integration of functions of two variables, geometric applications, multiple integrals, and practical problems arising in engineering subjects.
MECHANICAL ENGINEERING
Professor Earle
Professor Kavanaugh
Associate Professor Carpenter
Associate Professor Shubert
Instructor Freeman

MECHANICAL ENGINEERING 1, 2—Mechanics—Semesters 1 and 2. (Kavanaugh)
Junior VI, VII, IX. (Elective): (3 and 0)
Prerequisites: Mathematics 6; Physics 5, 6.

The subjects taught are composition and resolution of forces; solution of force systems; couples; centroids and centers of gravity; friction; moment of inertia; rectilinear motion; curvilinear motion; rotation; combined translation and rotation; work and energy; impulse, momentum, impact.


MECHANICAL ENGINEERING 3—Mechanics—Semester 1—(Kavanaugh)
Junior II, V: (3 and 0)
Mathematics 6; Physics 1, 2.

This course is similar to mechanical engineering 1, 2, but is arranged to suit the needs of students in courses II and V, and precedes strength of materials and graphic statics.

MECHANICAL ENGINEERING 4—Mechanical Engineering—Semester 2. (Carpenter, Shubert and Freeman)
Junior V, VI, VII, VIII: (3 and 2)
Prerequisite: Mathematics 7

A general survey of the field of power engineering, taking up the essentials for the production of power, and the principles governing the action of various mechanical motors, and the comparison of their performance. Steam power includes fuels, combustion, theory of steam generation, boilers, boiler auxiliaries, steam turbines, auxiliaries for steam engines and turbines and the testing of steam power equipment. Gas power includes a study of internal combustion engines together with their fuels, gas producers and various auxiliaries connected with internal combustion engine power plants.

Application of steam and gas power to locomotives, automobiles, trucks and tractors.
Introductory to mechanical engineering and embracing, (a) the study of calibration of leading types of instruments and apparatus used in mechanical engineering, and (b) elementary tests of materials and machinery.


MECHANICAL ENGINEERING 5, 6—Mechanical Engineering—Semesters 1 and 2. (Earle and Freeman).
Senior VII: Semester 1 (5 and 4), Semester 2 (5 and 5)
Prerequisite: Mechanical Engineering 4.

First semester: Thermodynamics of gasses, steam, etc. In this is taken up heat and heat power plants, laws of gasses; expansion and compression, entropy, gas and vapor cycles, properties of steam power, efficiency and performance of engines, both theoretical and actual, and methods of increasing the efficiency of the actual steam engine; steam engine parts, and types of steam engine governors, valve gears of steam engine, indicator diagrams for both simple and compound engines, performance of steam engine.

Second semester: Thorough study of steam turbines, including design; external and internal combustion engines, fuels, combustion, boilers, superheaters, draft and draft apparatus, utilization of waste heat, heat transfer, gas producers, producer gas, feed water heaters, condensers and auxiliaries; purification of water, power plants, compressed air, refrigeration. During the whole course many problems covering principles involved are worked out. A graded series of experiments upon the quality of lubricants, strength of engineering materials, and operating characteristics of representative types of steam, internal combustion, and hydraulic machinery. During the second semester a number of elaborate and highly technical experimental problems are undertaken, problems of special interest to the mechanical engineer.


MECHANICAL ENGINEERING 7, 8—Mechanical Engineering—Semesters 1 and 2. (Earle, Carpenter and Freeman).
Senior VI: (3 and 2)
Prerequisite: Mechanical Engineering 4.

First semester: Study of thermodynamics of gasses, properties of steam, entropy, valve gears, indicators, losses in engines, compound engines, superheated steam and its application, steam jackets, and injectors.

Second semester: Condensers feed water heaters, governors, turning efforts on crank shaft, fly wheel design, study of details of en-
gines, balancing of engines, performance of engines, locomotives, steam turbines, their application of design, refrigeration, and ice plants, power plant auxiliaries.

Laboratory similar to that given in mechanical engineering 5, 6. Text-books: Ripper's "Steam Engine, Theory and Practice." Moyer's "Power Plant Testing."

MECHANICAL ENGINEERING 9, 10—Mechanical Engineering—
Semester 1. (Earle, Carpenter and Freeman).

Senior V: Semester 1 (3 and 2).
Prerequisite: Mechanical Engineering 4.

This course is very similar to mechanical engineering 4 except that the laboratory work is curtailed and suited more to the needs of the civil engineer.

Laboratory similar to that given in mechanical engineering 5, 6. Text-books: Ripper's "Steam Engine, Theory and Practice." Moyer's "Power Plant Testing."

MECHANICAL ENGINEERING 11—Mechanical Engineering—
Semester 1. (Earle, Carpenter and Freeman).

Senior VIII; (3 and 2)
Prerequisite: Mechanical Engineering 4.

This course is designed to briefly cover the fundamentals of mechanical engineering most necessary for the textile and chemical engineer to know. The course is somewhat similar to mechanical engineering 7, 8, but shorter.


MECHANICAL ENGINEERING 13—Design—Semester 1: (Carpenter)

Senior VI: (0 and 2)
Prerequisites; Drawing 18, Mechanical Engineering 4.

This course is similar to mechanical engineering but briefer and especially arranged for electrical engineering students.

MECHANICAL ENGINEERING 14—Design—Semester 2. (Carpenter)

Senior VII: (0 and 2)
Prerequisites; Drawing 18; Mechanical Engineering 4.

An analytical and graphical study of the fundamental principles of construction of various classes of certain machinery such as the steam engine, pumps, steam turbines, etc., by the solution of certain problems in design.

Division Rooms and Equipment

The laboratory is situated on the ground floor of the engineering building, and occupies a room 37 feet by 108 feet, and a room 37 feet by 50 feet, and contains the following equipment:
For Steam Engineering.—One 15 hp. horizontal locomotive type boiler; one 6 hp. Erie, plain slide valve steam engine, throttling governor; one 5 vertical engine built by students; one 15 hp. Payne high speed automatic cut off engine; one 40 hp. McEwen engine designed to give very close regulation of speed; one Corliss cross compound engine, arranged to run either condensing or noncondensing and with either or both cylinders with high pressure steam; one 7 kw. Curtis steam turbine non-condensing, direct connected to a two pole interpole direct current compounded generator, with necessary switchboard and instruments; one Wheeler surface condenser, with combined air and circulating pumps; one separately fired Foster superheater; one set steam gauge testing apparatus; one Carpenter's separating calorimeter; two Carpenter's throttling calorimeters; six steam engine indicators of various makes; four injectors; two draft gauges; seven steam gauges.

For Hydraulic Engineering—One DeLaval centrifugal pump 100 g. p. m. against 100 feet head; one power triplex pump; one Pelton water motor; one hydraulic ram; three duplex pumps of different makes; one gear pump; two weirs; two hook guages; one complete Mueller outfit for testing water meters.

For Compressed Air—One Clayton air compressor, water jacketed; one improved air motor; one Sirroco blower direct connected to D. C. variable speed motor.

For Fuel and Lubricants.—One Carpenter's coal calorimeter with scales, balances and oxygen generating device; one standard viscosimeter; one Thurston friction tester; one Saybolt (U. S. Standard) viscosimeter; one open flash and fire tester; one Emerson bomb coal calorimeter with adiabatic jacket.

For Gas Engines.—One 5hp. Otto gasoline engine; one 7 hp. Alamo gasoline engine, and Delco outfit, one 3 hp. Meitz and Weiss oil engine, one 25 hp. Fairbanks Morse oil engine, type Y, and two 6 cylinders Continental auto engines, one connected to a 75 hp. General Electric Co. electric dynrometer and the other to a water brake.

Miscellaneous.—One 6 hp. transmission dynamometer, graduated to read horse-power direct and built by students; eight platform scales; four spring balances; seven mercury thermometers; one electrical resistance thermometer; two Bristol thermo-couples for reading temperatures to 2,000 and 2,900 degrees respectively; planimeters. All apparatus is so arranged that it may be used for separate or combined tests. Besides the apparatus in this room, the apparatus in the power station, pumping station and refrigeration plant are available for instruction and tests. For lists of equipment see description of buildings.
MILITARY DEPARTMENT
Lieut. Colonel Cole, Professor
Captain Lee, Assistant Professor
Captain Higgins, Assistant Professor
Captain Penrose, Assistant Professor
Lieut. Johnson, Assistant Professor
Lieut. Balcar, Assistant Professor

MILITARY SCIENCE 1, 2.—Military Science and Tactics.
Freshman Class. All courses: (1 and 2)
Infantry drill regulations; Close and extended order; Ceremonies.
Rifle Marksmanship; Nomenclature and care of rifle; Gallery practice; Range practice.
Military Hygiene and First Aid.
Physical Training: Setting-up exercises; Mass games; Mass athletics.
Military Courtesy: Principles of military discipline; the Military Courtesies of the Army of the United States.

MILITARY SCIENCE 3, 4.—Military Science and Tactics.
Sophomore Class. all courses, (1 and 2).
Infantry Weapons: The automatic rifle.
Musketry: Weapons of the Infantry squad; range estimation; fire discipline; fire control; control of movements; conduct of fire in the attack and the defense; combat practice
Interior Guard Duty: Duties of officers, Non commissioned officers and privates of the guard.
Command and Leadership: Exercise of command appropriate to non-commissioned officers.

MILITARY SCIENCE 5, 6.—Military Science and Tactics—Semesters 1 and 2.
Junior Class R. O. T. C. 1st Semester (2 and 3) 2nd Semester (3 and 2).
Map Reading and Military Sketching: Visibility problems, reading of maps, making of maps.
Field Engineering: Trenches, obstacles, shelters, machine gun emplacements, observation post; working parties, concealment and camouflage.
Infantry Weapons: The machine gun.
Military Law and Rules of Land Warfare; definition; sources
and kinds military jurisdiction; classification and composition of courts; exercise of military jurisdiction; persons subject to military law; articles of war explained; procedure before trial; procedure of Courts-Martial; evidence; sentences; punishment without trial: rules of land warfare; moot court exercises.

Command and Leadership: Exercise of Command appropriate to grade of Sergeant and Lieutenant.

Infantry Drill Regulations: The Battalion and the Regiment.

**MILITARY SCIENCE, 5a, 6a—Military Science and Tactics—Semester 1 and 2,**

Junior Class, non-R. O. T. C. (0 and 3).

Same as Course 5, 6 but covering only three-fifths of the work.

**MILITARY SCIENCE, 7, 8—Military Science and Tactics—Semester 1 and 2,**

Senior Class R. O. T. C., First Semester (2 and 3); Second Semester, (3 and 2).

Combat Principles: General view of the organization and conduct of the Battalion and higher units; principles governing the organization; armament, equipment, and conduct of the rifle, machine gun, Howitzer and Headquarters Companies in offensive and defensive combat; tactical principles governing the conduct of the platoon and large units in offensive and defensive combat; principles the employment and details of the conduct of covering detachments in open and position warfare; exercises and problems on sand table, map and terrain

Infantry Weapons: 37 Millimeter (one pounders); the light mortar.

Military History: American Military History including the World War; the sources of authority for our military establishment; development of the military resources; the state of National preparedness for war at a critical period in the history of the United States; the cost of American Wars in relation to National unpreparedness.

Administration: Preparation of papers pertaining to the administration of a company.

Command and Leadership—Exercise of command appropriate to the grades of Lieutenant to Major.

Pistol Marksmanship.

**MILITARY SCIENCE 7a, 8a—Military Science and Tactics—Semester 1 and 2,**

Senior Class, Non-R. O. T. C. (0 and 3)

Same as course 7, 8 but covering only about three-fifths of the work
MODERN LANGUAGES

GERMAN 1, 2.—(Lippincott)

Junior Class; Course IX. (Elective)

The essentials of German grammar; collateral reading; conversation.

Text-book: Bacon’s “New German Grammar.”

Course IX: Three periods a week throughout the session.

GERMAN 3, 4—(Lippincott)

Senior Class; Courses IX (Elective)

German prose composition; study of German words and idioms; German-English cognates; translation of literary and scientific German; conversation.

Text-books: Bacon’s “German Composition,” Manley-Carl Schurdtz’s “Lebenserinnerungen,” Gerstaecker’s “Germelshausen,” Wallentin’s “Grundzüge der Naturlehre,” or texts of equal difficulty.

Three periods a week throughout the session.

FRENCH I—(Aull)

Junior Class: Course IX. (Elective)

The essentials of French grammar; collateral reading; translation of easy French prose; French prose composition.

Three periods a week throughout the session.

FRENCH II—(Aull)

Senior Class: Course IX (Elective)

French syntax; French verbs; French idioms and prepositions; translation of literary and scientific French.

Text-books: Cortina’s French Method; De Nonvert’s La Belle France; Herdler’s Scientific Reader.

Two periods a week throughout the session.

SPANISH I (Aull)

Junior Class: Course IX (Elective)

This course is an introduction to the Spanish language consisting of drill in grammar, translation from Spanish into English and from English into Spanish, and conversation. Emphasis is laid on pronunciation, accent, and idiom.

Text-books: “A Spanish Grammar” by Hills and Ford, and “A Spanish Reader” by Bransby.

Three periods a week throughout the session.

SPANISH II—(Aull)

Senior Class: Course IX (Elective)

This is a continuation of Spanish—I with the addition of more reading and conversation. It takes up also a study of pamphlets, bulletins and books concerning the Latin-American countries, especially from an industrial and commercial point of view.

Text-books: The same as in Course I and a Spanish newspaper.

Two periods a week throughout the session.
PHYSICS
Professor Godfrey
Assistant Professor Phebus
Instructors Davis and Reed

PHYSICS 1, 2.—General Physics—Semesters 1 and 2.—(Phebus, Davis and Reed).

Freshman: II, V, VI, VII, VIII: (2 and 2).
Prerequisite: Entrance mathematics: Entrance physics 1 unit.

This is an introductory course in general physics for engineering students. Its object is to make the student familiar with the fundamental principles of physics and to lay the foundation for subsequent work. Mechanics, heat, light, electricity, and magnetism are studied with emphasis upon the problem work. In the laboratory elementary quantitative experiments in these subjects are assigned. Mimeographed notes are used, and such accuracy as the conditions permit is insisted upon so that the student may acquire some idea of modern experimental methods. The curve plotting method of showing results is taught.


PHYSICS 3, 4—Principles of Physics—Semesters 1 and 2. (Phebus)

Sophomore: I, III, IX: (2 and 2)
Prerequisite: Mathematics 1, 2.

This is a general course in college physics arranged particularly to meet the needs of students in agriculture and chemistry. The physical laws in mechanics, heat, light, electricity, and magnetism are studied with reference to their application in these courses. Particular attention is given to the properties of matter and to the principles of operation and adjustment of instruments used in later work in physical chemistry and agriculture. Directions for the experiments assigned are given in mimeographed notes.


PHYSICS 5, 6—College Physics—Semesters 1 and 2. (Godfrey)

Sophomore: V, VI, VII: (3 and 0)
Prerequisite: Physics 1, 2, and Mathematics 3.

This course is a continuation of physics 1, 2 for engineering students. Lectures with demonstrations are given covering the fundamental principles given in the text, and the assigned problems are chosen with special reference to the application of physical laws in engineering work. The course covers the subject matter of the text.

PHYSICS 7, 8—Laboratory Physics—Semesters 1 and 2 (Godfrey and Phebus)  
Sophomore: V, VI, VII, VIII: (0 and 2.)  
Prerequisite: Physics 1, 2, and Mathematics 3,  
This work includes careful quantitative measurements in mechanics, heat, light, electricity, and magnetism. It is the equivalent to that described in the average college manual of physical measurements. The student is required to understand the fundamental principles involved in the experiments and to show by his results some skill in physical manipulation and careful method in the calculations required. In much of the work he is thrown upon his own resources and expected to develop some confidence in the correctness of his work. The report includes some discussion of the limitations of the method used and its accuracy. This course is concurrent with Physics 5, 6.  
Text-book: Mimeographed notes. 

PHYSICS 9, 10—General Physics—(Godfrey and Phebus).  
Sophomore: IX: (3 and 2)  
Students making preparation to enter a medical college and those desiring a general course in college physics are required to take this course. All the topics given in the text are studied, and the laboratory work has been prepared to cover all these topics.  

PHYSICS 10, 11—Advanced Physics—(Godfrey and Phebus)  
Junior and Senior: IX, (Elective): (2 and 2)  
Prerequisite: Physics 9, 10.  
This course is for students specializing in Physics on topics selected to suit the plans of the students taking it for either advanced engineering or graduate work in science. A careful study of only a few topics is attempted. Projects in molecular physics, vectorial mechanics, thermodynamics, radiation, and electro-magnetic waves are suggested. Special facilities are available for experiments with spark discharge, damped and undamped electric waves and various types of oscillating circuits. 

PHYSICS 12, 13—Principles of Physics—(Godfrey and Phebus)  
Junior and Senior: IX; (Elective) (2 and 2)  
Prerequisite: Physics 9, 10.  
Students intending to teach are given a course covering the fundamentals of general Physics with suggestions regarding methods of presentation and demonstration, organization of laboratory work, and objects to be sought in teaching elementary physics or general science. The laboratory work is a continuation of the sophomore course with more advanced experiments. A wide choice of experi-
ments is given so that the course, while primarily intended for teachers, is also suited to the needs of students in general science not intending to teach.

**PHYSICS 14—Elementary Descriptive Astronomy—Semester 2.**

—(Godfrey).

Junior: V: (0 and 2)

Prerequisite: Physics 5, 6 and Mathematics 5, 6.

This is a brief course in general astronomy arranged with special reference to the work of civil engineers. The motions of the heavenly bodies are studied and some time is given to the general facts of descriptive astronomy.


**Division Rooms and Equipment.**

The Physics Division is located on the ground floor of the Chapel Building. The two lecture rooms, each seating eighty-four students, are equipped with individual tablet arm chairs on a stepped floor and supplied with projection equipment. There are three large laboratories, a dark room, an instrument room, storage room, and Division office room. The lecture rooms and laboratories are equipped with reinforced concrete tables on concrete foundation. They are supplied with gas, water, and air pipe lines throughout and have electrical connection with switchboard in battery and generator room. The division is provided with a great variety of apparatus for both lecture and laboratory purposes, to which additions are made each year.

**SHOP WORK**

Associate Professor Shubert

Associate Professor Marshall

Associate Professor Johnson

**SHOP WORK 1, 2—Forge Work—Semesters 1 and 2.** (Freeman)

Freshman V, VI, VII, VIII: (0 and 2)

This course embraces all the fundamental principles of forge work, such as, drawing out, upsetting, bending, shouldering, punching and welding in iron and mild steel.

During the first semester the work is done in wrought iron and mild steel and each exercise is carefully explained and demonstrated by the instructor, with full discussion by student and teacher.

The second semester is devoted to tool making and tempering steel. Special lectures are given on the manufacture and handling of iron and tool steel, and with emphasis on making, grinding and polishing tools.
Each student is supplied with working drawings and a complete outfit for doing the work on the plan that is found in any good commercial plant.

**SHOP WORK 3—Forge Work—Semester 1.—(Johnson)**

Freshman II: (0 and 2)

This course is identical with shop work 1 for the first semester.

**SHOP WORK 5, 6—Forge Work—Semesters 1 and 2.—(Johnson)**

Freshman I, III, IX: (0 and 2)

This course is identical with shop work 1 for the first semester. During the second semester, the work as more directly related to the upkeep of a farm is given, such as repairs on machinery and farm equipment, special attention being given to welding and brazing in the open fire.

**SHOP WORK 7, 8—Foundry—Semesters 1 and 2.—(Johnson)**

Sophomore VI, VII, VIII: (0 and 2)

This course is designed to give the student a comprehensive idea of the principles of foundry practice, as related to the trades, and the importance of this branch of industry, as to its relation to engineering work.

The first semester is taken up with such things as moulding sands, flasks and the use of the tools used in the trade, various plain moulding from simple patterns, ramming, gating, venting and facing moulds.

The second semester covers the mixing of metals, melting and pouring moulds, core making and its connection with foundry practice, also, notes and talks on the physical and chemical properties of the various ferrous metals. A portion of this time is spent with brass work, dealing with all of the non-ferrous metals.

**SHOP WORK 9—Industrial Arts—Semester 1.—(Johnson)**

Junior IX. (0 and 2)

Work is given covering the fundamentals underlying foundry practice, such as tempering sand, mixing facings, making dry sand cores, and making iron and brass in green sand.

**SHOP WORK 11—Industrial Arts—Semester 1.—(Johnson)**

Junior IX. (Elective): (0 and 2)

Prerequisite Shop Work 9.

This course is devoted to the history of foundry practice, the study of cupola construction, mixing metals, classification of patterns, and the methods of handling foundry work in the shop.

Text-book: Wendt’s “Foundry Work” supplemented with notes and talks.

**SHOP WORK 13, 14—Machine Shop.** Semester 1 and 2. (Shubert)

Junior VI, VII. Semester 1. (0 and 5) Semester 2 (0 and 3)

Prerequisite: Shop work 2, 8.

This course begins with chipping, filing, and scraping, which involves the use of the lay-out table, surface gage, center punch, ham-
mer, file, chisel, scraper, surface plate, square, and straight edge, which concludes the term of bench work.

The students then take up the various operations on machine tools, which have been previously demonstrated by the instructor. All measurements of machine tool operations come to very close limits.

In this course the student is given a practical working knowledge of machine shop tools, and of directing machine shop work efficiently. One hour of the weekly period is used by the instructor in demonstrating all operations together with talks on uses and care of precision tools. This is to familiarize the student with the difficulties that arise in his practical machine shop work.

Junior V; (0 and 3)
Prerequisites: Shop work 2, 8
Essentially the same as shop work 13, 14 but less extensive.

SHOP WORK 17, 18—Wood Work—Semesters 1 and 2. (Marshall)
Fresh V, VI, VII, VIII: (0 and 2)
This course includes both bench and lathe work and is designed to familiarize the student with tools and machinery commonly used in wood work. The latter part of this course is devoted to the study of the best methods of finishing.
Text-book: Lefax Note Book.

SHOP WORK 19—Wood Work.—Semester 1.—(Marshall)
Freshman II: (0 and 2)
This course is identical with shop work 17 for the first semester.

SHOP WORK 21, 22—Pattern Making—Semesters 1 and 2. (Marshall)
Sophomore VI, VII: (0 and 2)
Prerequisite: Shop work 18.
This course consists of exercises in pattern making with special reference to the principles involved. It is planned to outline to the student a general survey of the most suitable materials, the special tools, and the fundamental processes of the trade, together with the relations of the allied departments—particularly those of the foundry. The student is required to make, from machine drawings, full sized pattern drawings, making the necessary allowances for finish, shrinkage and draft. The course is further illuminated by lectures on the metal trades and the manufacture of iron products, so that the pupil learns exactly what part pattern-making plays in the commercial world.
SHOP WORK 23, 24—Industrial Arts—Semesters 1 and 2. (Marshall)

Junior IX: (Elective) (0 and 2)

This course is designed for students who wish to teach manual training. Special emphasis is laid on good form in the use of wood working tools and machinery. The course is more intensive and more exacting than that required of the regular engineering students.

A proportional part of the course is given to the study and application of the latest and best finishes, including varnishes, stains, enamels, paints and polychrome.

SHOP WORK 25, 26—Industrial Arts—Semesters 1 and 2. (Marshall)

Senior IX: (Elective) (0 and 2)

Prerequisite: Shop work 14.

This course includes lectures and assigned work in advanced cabinet work and pattern making. Some time is given in practice teaching and observation, each student being assigned as assistant in some of the shop classes throughout the entire session.

SHOP WORK 101—Forge Shop—Semester 1. (Freeman)

Two-Year Agr. XII: (0 and 2)

A course devoted to problems encountered in the upkeep of the farm. Exercises in tempering, riveting, plow sharpening, and repairs to farm machinery are given.

Equipment

The Forge Shop occupies a room 37 by 98 feet. The equipment is installed under two separate systems. One system consists of 18 Buffalo down-draft forges; 18 Hay Budden anvils equipped with all necessary small tools; a 60-inch exhaust fan; a No. 4 direct-connected pressure blower; a drill press; an emery grinder; a bending cone; a Buffalo iron shear; two swage blocks; a vise and work bench. The other system consists of 18 Sturtevant down-draft forges; 18 Hay Budden anvils thoroughly equipped with small tools; a 60-inch exhaust fan, direct connected; and a blackboard for special drawings.

The Foundry occupies a space of 43 by 76 feet, and is free from posts and other obstructions. It is equipped with a 26-inch Victor Colliau's cupola; a No. 7 pressure blower; a Millett core oven; a large Paxou brick core oven; a two-ton post crane; tools for eighteen students; also a case of special tools, a full equipment of hand, bull, and truck ladles, an electric riddle, and a full line of foundry flasks.
The brass foundry is equipped with an 18-inch furnace; a drying stove; clamps, flasks, tongs, and graphite crucibles for making and pouring molds. Also one Ferro-fix brazing machine with full equipment for doing diversified cast iron brazing.

The Machine Shop occupies the ground floor and part of the basement of the southwest wing of the engineering building, the main floor being 45 by 100 feet. The equipment consists of the following: suitable benches and vises for chipping, filing, and assembling of machines, one 18-inch by 12 foot engine lathe, one 18 inch by 8 foot engine lathe, eleven 14 inch by 6 foot engine lathes, one 14 inch by 8 foot speed lathe, five direct motor drive 14 inch by 5 foot engine lathes, two universal milling machines, one 22 inch by 6 foot planer, one 14 inch shaper, one 10 inch slotter, one 10 inch by 30 inch universal grinder, one universal tool and cutter grinder, one twist drill grinder, one 18 inch floor grinder, two 9 inch floor grinders, one 36 inch wet floor grinder, one 28 inch vertical drill press, one 18 inch vertical drill press, one power hack saw, one down draft forge equipment, one oil burning tempering furnace, a tool room containing hand tools, gages and fixtures.

The Wood Shop division consists of two shops. The instructional shop is devoted to class room work for freshman and sophomore students. The class room measures 50 by 100 feet and contains thirty-two speed lathes, fully equipped; fifty work benches, each supplied with a full set of tools; one universal saw; one bench joiner and planer; one band saw; one jig saw; one motor-driven disc sander; two oil stone grinders; one shaper and carving machine; one universal trimmer;—all machines and tools being of the latest approved design for class room work in wood work and pattern making. This class room is served by a convenient stock room, and tool room.

The commercial wood shop is equipped with planing mill machinery consisting of a double-roll planer, one rip saw, one cross cut table saw, one swinging cut-off saw, one lathe with twelve-foot bed, one joiner, one molding machine, one double-headed shaper, one mortising and boring machine, one drum sand papering machine, and an asortment of benches, clamps, glue pots, etc. This shop is 40 x 100 feet and is driven by a 20 hp. electric motor. A lumber shed and steam dry kiln adjoin.
TECHNOLOGY OF FABRICS

Associate Professor Cheatham
Instructor McKenna

TECHNOLOGY OF FABRICS 1—Fabric Construction—Semester 1.
(Cheatham and McKenna)
Sophomore VIII: (2 and 0)
A study of yarns used in fabrics. Yarn calculations. Classes of
textile fabrics. Classes of woven fabrics. Method of representing
weaves. Weaves used in standard fabrics. Diameters of yarns.
Maximum ends and picks per inch. Effect of yarn twist. Shrink-
age and take-up. Reed calculations. Air space and ends per dent
in reeds. Cloth calculations.

TECHNOLOGY OF FABRICS 2—Elementary Design—Semester 2.
(Cheatham and McKenna)
Sophomore VIII: (2 and 0)
Prerequisite: Technology of Fabrics 1.
Production of designs representing derivative twills and satins,
honeycombs, mock leno, granites, crepe, bedford cords, double
cloth, pique, corduroy, velvet, and extra warp designs. Extra selvage
motions, cam designing and top riggings.
Text-book: Posselt’s “Technology of Textile Design.”

TECHNOLOGY OF FABRICS 3—Dobby Designing—Semester 1.
(Cheatham)
Junior VIII. (0 and 2)
Prerequisite: Technology of Fabric 1, 2.
A study of pattern styles. Method of combining two or more
weaves. Ratio of construction for different weaves in patterns. Lay-
ing out designs when either “ground” or “over-all” is given. Drawing
in and chain drafts and reed plans. Point to start drawing
warp. Reed, harness and warp calculations. Each student is re-
quired to produce ten designs from sketches and cloth specifications.

TECHNOLOGY OF FABRICS 5, 6—Fabric Analysis—Semesters 1
and 2 (McKenna)
Junior VIII: (0 and 2)
Prerequisite: Technology of Fabrics 1. 2.
Methods of distinguishing between cotton, wool, silk and linen.
Finding per cent of different fibers in fabrics. Determining amount
of size in fabrics. Methods of finding yards per pound from small
samples. Over-all and ground constructions. Per cent of warp and
filling. Warp and filling numbers. Finding weave and looming
TECHNOLOGY OF FABRICS 133

Each student is required to analyze six samples the first semester and ten the second semester.

Required equipment: No. 607 Steel Rule; 1" Pick Glass; Pick Needle.

TECHNOLOGY OF FABRICS 7—Leno Designing and Warp Preparation—Semester 1 (Cheatham)
Senior VIII: (2 and 0)


TECHNOLOGY OF FABRICS 8—Jacquard Designing—Semester 2 (McKenna)
Senior VIII: (0 and 4)
A study of the different types of Jacquard machines. Types and methods of harness building. Laying out designs for different tie ups. Card cutting and lacing. Method of repeating and machine lacing. Each student will be required to make one design for a specified tie-up and to prepare cards therefrom.


TECHNOLOGY OF FABRICS 9—Weave Room Methods—Semester 2 (Cheatham)
Senior VIII: (3 and 0)
General Management of weaving mills, including organization and laying out of weaving room and preparatory machinery, Cost finding.

TECHNOLOGY OF FABRICS 11.—Plain Weaving—Semester 1 (McKenna)
Sophomore VIII: (0 and 2)
Instruction in the operation of automatic and non-automatic looms. Drawing in warps. Warping, winding and slashing.

TECHNOLOGY OF FABRICS 12—Loom Fixing—Semester 2 (McKenna)
Sophomore VIII: (0 and 2)
A systematic study of the motions of a loom. Setting and timing the parts with particular reference to economy in power and supplies. Multiple cam setting and production calculations.
Nelson's "Practical Loom Fixing"
TECHNOLOGY OF FABRICS 13, 14—Fancy Weaving—Semesters 1 and 2. (Cheatham)

Junior VIII: (0 and 2)
Prerequisites: Technology of Fabrics 11, 12.

This course is a combination of practical weaving and loom fixing on dobbies and box looms. A study of dobbey harness setting for various types of patterns. A detailed study of dobbies and box motions, and practice in building dobbey and box pattern chains.

Text Book: I. C. S. on Dobbies; Box Motions; Northrop Looms; Slashers; & Warpers.

TECHNOLOGY OF FABRICS 15 and 16—Pattern Weaving—Semesters 1 and 2 (Cheatham)

Senior VIII: (0 and 2)

Practice in putting on dobbey, box, and jacquard patterns which have been worked out by the students in courses 3, 7, and 8

TECHNOLOGY OF FABRICS 18. —Knitting — Semester 2. (Cheatham.)

Senior VIII: (0 and 2)


Division Rooms and Equipment

The equipment for this division occupies three rooms on the top floor of the Textile Building besides one office and two class rooms.

Knitting Room.—One “K” model Scott and Williams 220 needle hosiery machine; one Hemphill 200 needle “Banner” hosiery machine; one Brinton 176 needle ribber; one Jenckes 176 needle hosiery machine; one Wright Steady Dial looper; one 16-bobbin circular braider; one 13-bobbin flat braider; two Merrow overseaming machines; one 220 needle Banner knitting machine; 14 Gerhardt Hand Knitters.

Warping and Winding Room.—One Davis and Furber dressing machine; one Entwistle beamer; one Draper ball warper; one Draper beam warper; one Lowell Machine Shop single cylinder slasher; one jack spooler; one Altemus quiller; one Payne skein winder; one Steele 2-drum quiller, one 4-spindle Universal “Leeson” No. 90 quiller; 1 12-Spindle No. 90 Universal Winder, motor drive.

Weave Room.—Seventeen 14-inch hand looms with 25 harness dobbies; one 40-inch Northop loom, 16-harness dobbey; one 28-inch Northop loom, steel harness; three 40-inch Mason looms; one Crompton and Knowles 30-inch loom, 20 harness dobbey and leno
motion; one Crompton and Knowles 30-inch loom, 624-hook Holton Jacquard; one Crompton and Knowles 40-inch "Gem" loom, 4 by 4 box and 25 harness dobby; one Crompton and Knowles 26-inch terry towel loom, 3 by 1 box and 16-harness dobby; one Crompton and Knowles 64-inch damask loom, 4 by 1 box and 624-hook Jacquard; one Whitin 40-inch multiple cam loom; one Whitin 40-inch loom, 20 harness dobby; one 27-inch Whitin medium duck loom; two Kilburn and Lincoln 36-inch plain looms; one Crompton and Knowles 30-inch loom, 2 by 2 box and 16 harness dobby; one Crompton and Knowles 30-inch loom, 416-hook Jacquard and card multiplier; one "E" model 28-inch Draper loom, steel harness warp stop motion; one "E" model 28-inch Draper loom, two harness "string" warp stop motion; one "E" model 28-inch Draper loom, multiplecams and extra selvagemotion; one "K" model 28-inch Draper loom; double filling fork,feeler and leno motion; one 40-inch "Ideal" Stafford loom,feeler and 624-hook C. & K. Jacquard; one 30-inch "Ideal" Stafford bag loom; one 40-inch "Ideal" Stafford loom, two harness; one "Ideal" Stafford 4-harness loom; one four space, four bank, Crompton and Knowles narrow fabric loom, 416-hook Jacquard; one Crompton and Knowles 40-inch loom with 624-hook Jacquard; one Crompton and Knowles 30-inch 4 by 1 box loom with 20-harness dobby and leno motion; one Crompton and Knowles 30-inch 2 by 1 automatic box loom; one "E" model 40-inch Draper loom; multiple harness; one Hopedale Mfg. Co's 40-inch "Nordray" plain loom; one Hopedale Mfg. Co. 40-inch Nordray 6-harness satin loom; 1 C. & K. automatic Dobby Dress Goods, 46½”, 25 harness, 4 x 1 Box, motor drive; 1 C. & K. Dobby Silk, 60½ in., 25 harness, 4 x 4 Box, motor drive; one Royle French index, piano, card cutting machine; four drawing in frames and a complementary supply of reeds, combs, harness and pick gears. One Crompton & Knowles 26” Terry Towel loom, 2x1 Box, equipped with 16 Harness double cylinder and rocking cylinder motion dobby, positive terry let-off mechanism, 2 bank warp stop motion and spring jacks for the dobby; one 424-hook Halton double cylinder jaquard.

TEXTILE CHEMISTRY AND DYEING

Professor Doggett

TEXTILE CHEMISTRY 1—Organic Chemistry—Semester 1.

Junior VIII: (2 and 2)

Prerequisite: Chemistry 1, 2.

After a general introduction a detailed study of the aliphatic series follows, including constitution and structural theory. Some attention will be given to the history of organic chemistry.
The laboratory work consists in the preparation of one or more organic compounds illustrating each group. Some time is also given to qualitative organic analysis. Special attention is given to the proper setting up and manipulation of apparatus.


TEXTILE CHEMISTRY 2—Organic Chemistry—Semester 2.

Junior VIII: (2 and 2)
Prerequisite: Textile Chemistry 1.

The aromatic series of organic compounds is studied, special prominence being given to the structure and preparation of synthetic dyestuffs and of the intermediate compounds from which they are made.

In the laboratory typical aromatic compounds illustrative of each group as well as a number of intermediates and dyestuffs are prepared.

Reference book: Cain and Thorpe's "Synthetic Dyestuffs."

TEXTILE CHEMISTRY 3—Organic Chemistry—Semester 1.

Senior VIII: (2 and 2)
Prerequisites: Chemistry 1, 2; Textile Chemistry 1, 2.

The manufacture, uses, and technical analysis of the more important chemicals and other compounds used in the textile industry are studied.

The laboratory work in connection therewith consists in the preparation and analysis of the chemicals and other products most commonly used.


TEXTILE CHEMISTRY 4—Dyeing—Semester 2.

Senior VIII: (0 and 4)
Prerequisite: Textile Chemistry 3.

This course includes the bleaching, dyeing, mercerizing, and printing of cotton. Some attention is also given to the dyeing of wool and of silk. The more important mordants are prepared and applied, and experiments illustrating the properties and uses of gums, starches and chemicals used in the textile industry are made. Then follows color matching and the identification of dyes on the fiber. A brief discussion of the physical and chemical principles involved precedes the laboratory work of each period.


Division Rooms and Equipment.

The work in textile chemistry and dyeing is carried on in an experimental laboratory and dyehouse. The experimental laboratory has accommodation and apparatus for thirty students. The desks are supplied with gas, water, drawers, and lockers. The dyehouse equipment comprises one Schaum and Uhlinger self-balancing hydro-extractor; one model vacuum dyeing machine with steam engine attached; one Birst sample dyeing machine with electric motor attached; one calico printing machine; one Butterworth jigger; one Psarski dyeing machine; one Franklin dyeing machine; one Hussong dyeing machine; one mercerising machine for years; one steaming and ageing box; jacketed copper kettles.

VETERINARY SCIENCE

Professor Feeley.

VETERINARY SCIENCE 2—Anatomy and Physiology—Semester 2. (Feeley)

Junior 1, Elective: (2 and 2)

This course is a study of anatomy, physiology of digestion, farm sanitation, common diseases, and first aid treatment and is especially arranged for agricultural students.

The course in anatomy, which is arranged as an introduction to the study of physiology of digestion and stock judging; includes the study of skeletons and the principal articulations, muscles of locomotion and the organs of circulatory, respiratory, digestion, and urinary apparatus. Skeletons, models, and charts are used in this course. The physiology of digestion treats of the chemical and physical processes by which food is made soluble and capable of absorption. Farm sanitation deals with sanitary conditions and with the fundamentals in the control of contagious and infectious diseases. The common diseases and first aid treatment of farm animals are also studied.


VETERINARY SCIENCE 3—Diseases of Animals—Semester 1. (Feeley)

Senior I, Elective : (2 and 2)

This course covers the principles of etiology, pathology, diagnosis, and treatment of the various diseases of domestic animals.
VETERINARY SCIENCE 101—Semester 1. (Feeley)
Two-year Agr. XII: (2 and 2)
A brief study of anatomy, physiology, digestion, farm sanitation, common diseases, and first aid treatment of farm animals.
Text-book: “Veterinary Studies for Agricultural Students”—Reynolds.

YARN MANUFACTURING

Professor Eaton
Assistant Professor Campbell

YARN MANUFACTURING 1—Pickers—Semester 1. (Eaton and Campbell)
Sophomore, VIII: (2 and 2)
Opening and mixing cotton. Study of bale breakers, automatic feeders, intermediate and finisher lappers. Various styles of openers, setting and adjusting same. Cleaning trunks, different kinds of beaters, screens, fans, calendar rolls, evener motion and measuring motion. Calculation for drafts, production, speeds, etc. Practice operating pickers and cleaning machinery.

YARN MANUFACTURE 2—Cards and Drawing Frames—Semester 2 (Eaton and Campbell)
Sophomore VIII: (2 and 2)
A study of the revolving flat card, principal parts, stripping, clothing, grinding, brushing, and settings. Calculations for speeds, production, waste, draft, and constants for same. Setting of metallic and leather covered rolls on the drawing frame. Care and varnishing leather covered rolls, calculation for speeds and drafts.
Practice operating cards, drawing frames, and other machinery.
Text-book: Winchester’s “Cotton Yarn Manufacture.”

YARN MANUFACTURE 3.—Roving Frames—Semester 1. (Eaton)
Junior VIII (2 and 2)
The construction and operation of roving frames, study of the slubber, intermediate, roving frame, and jack frame. The different styles of top rolls used and the method of weighting them. Making necessary calculations for draft, twist, tension, lay, taper and constants for same. Production per spindle and sizing the roving, turns per inch for different hanks.
Practice operating roving frames.
Text-book: Winchester’s “Cotton Yarn Manufacture.”
YARN MANUFACTURE 4—Cotton Grading, Doubling and Drafting—Semester 2 (Campbell)
Junior VIII: (2 and 2)
Classing of cotton according to U. S. Government standards for grades, tinges, and stains. Stapling of cotton, study of Sea Island, Egyptian, and all grades of cotton raised in the United States. Methods of ginning, marketing, contracts for cotton, receiving and handling cotton at mills, and claims.
Text-book: Notes.
Calculation for draft, production, weights, and number of machines required for different counts, labor costs, and production of yarn from picker to spinning frame inclusive.
Practice operating spinning frames.

YARN MANUFACTURE 5—Spinning, Spooling and Twisting—Semester 1 (Eaton)
Senior VIII (2 and 2)
Construction and principal parts of spinning and spooling machines, such as builder motions, travelers, rolls and creels. Calculations on twisting, drafting, doubling, and constants. Wet and dry twisting, amount of twist in different ply and coarse yarns, balanced twist, and thread. Size of rings, steel and brass travelers for different counts. Calculation for the same.
Practice operating spinning and spooling machines.
Text-book: Winchester's "Cotton Yarn Manufacture."

YARN MANUFACTURE 6—Combers, Sliver Lap, and Ribbon Lap—Semester 2. (Campbell)
Senior VIII: (1 and 2)
Construction, setting, and adjustment of sliver lap and ribbon lap machines. Calculations for draft and production of the same. Study of somber, timing, setting for different staples of cotton and production of waste. Operation and management of combers, and all necessary calculations.
Practice in operating the sliver lap, ribbon lap, and comber machines; also in running test lots of cotton through the different machines.
Text-book: Winchester's "Cotton Yarn Manufacture."

YARN MANUFACTURE 8—Mill Economics—Semester 2. (Eaton)
Senior VIII: (1 and 0)
The character of this course is descriptive rather than theoretical. Its aim is to explain the principles of economics as applied to general management. This includes the study of cost of production in the various departments, wages and labor conditions, care of mill and mill village. Students will report in class on articles assigned them in technical books and periodicals.
Division Rooms and Equipment.

Picker Rooms.—Pickers—One Atherton automatic feeder; one Atherton breaker lapper; one Atherton finisher lapper. Pickers are equipped with Brown-St. Onge patent adjustable grid bars.

Card Room.—Cards—One Mason 40 inch revolving top flat card 1, Woonsocket Machine Co., Revolving Top flat card.

Double Carding Process.—One Saco and Pettee 40 inch breaker card; one Saco and Pettee 20 inch improved lap winder; one Saco and Pettee 40 inch finisher card.

Combing.—One Whitin sliver lapper; one Whitin four head, ribbon lapper, one eight head, Whitin high speed comber.

Railway Heads.—One Saco and Pettee railway head, with evener motion, stop motion and metallic rolls; one Mason railway head, with evener motion, stop motion and metallic rolls.

Drawing Frames.—Two Saco and Pettee drawing frames four deliveries, stop motions, metallic rolls; one Mason draw frame, four deliveries, stop motions and metallic rolls; one Whitin drawing frame four deliveries, leather covered rolls, one Woonsocket drawing frame, four deliveries, Metallic rolls.

Fly Frames.—One Saco and Pettee 12 x 6 inch, 40 spindle slubber, with latest differential motion; one Saco and Pettee 6 x 3 inch 80 spindle, fine roving frame, with latest differential motion, one new four roller Slubber 60 spindles Saco Lowell, one new four-roller intermediate 72 spindles Saco Lowell, one new Woonsocket fine frame 80 spindles, one Woonsocket 6 x 2½ inch, 96 spindle jack roving frame, with Daly’s improved differential motion.

Ring Spinning.—One Saco and Pettee combination warp and filling ring spinning frame, 128 spindles; one Mason combination warp and filling ring spinning frame, 112 spindles; two Fales and Jenks combination warp and filling ring spinning frames, 80 spindles each designed for spinning fine counts. two Whitin combination warp and filling ring spinning frames, 80 spindles each. One new Fales and Jenks tape drive Westinghouse motor driven 80 spindle spinning frame for both warps filling. 1 H. & B 80 spindle, motor driven spinning frame with self weighting back and middle rolls traveling clearer.

Spooling.—Two Draper spoolers 40 spindles each; one Saco and Pettee spooler, 72 spindles; one Barber-Coleman automatic knotter, one Byrd automatic knotter; One motor driven Westinghouse 24 spindle Eastern and Burnham spooler; one Barber-Coleman knotter “Simplex.”

Twisting.—One Draper combination wet and dry twister, 48 spindles; two Fales and Jenks wet twisters, combination filling and taper top wind; 70 spindles each.
Winding.—One universal winder and doubler; one Foster Cone and tube winder.
Reeling.—One Draper 54 inch reel, 50 spindles.

MISCELLANEOUS EQUIPMENT—One set Washburn wooden spinning rollers; one set self weighting iron rollers; Fairbanks Scales; Model of Daly's differential motion; models of Campbell ball bearing rolls; sample from all processes in making spinning rings; model of Eagle gin; Charlotte Supply Co's skein tester; Reeves variable speed transmission; Bahnson and American Moistening Co. Humidifiers.

TESTING LABORATORY—One Alfred Suter direct yarn counter; one Alfred Suter twist counter; Brown and Sharpe roving reel, yarn reel scales and weights; Henry L. Scott Yarn and Cloth tester, motor driven; Moscrop single strand tester; Emerson conditioning oven; Torsion Balance yarn calculating scales and necessary accessories.

ZOÖLOGY AND ENTOMOLOGY
Professor Sherman
Associate Professor Eddy
Assistant Professor Anderson

ZOÖLOGY 2—General Zoology—Semester 2 (Anderson)
Sophomore, I, IX, XIII, (2 and 4)
A study of the fundamental principles of structure and life processes of animals followed by a survey of the animal kingdom with particular reference to the economic groups. Given by text-book references, laboratory and field practice, and supplementary lectures.
This course is designed to give the necessary general knowledge of zoology and lay a foundation for the special work in agriculture that follows.

ENTOMOLOGY 3:—General and Applied Entomology—Semester 1
Junior 1, Elective: (2 and 2)
Prerequisite: Zoology 2.
A study of the fundamental structure, development, habits groups and importance of insects with special reference to the economic forms.
ENTOMOLOGY 4—Advanced General Entomology—Semester 2. (Eddy)
   Senior I, Elective: (2 and 2)
   Prerequisite: Entomology 3.
   A fundamental and comprehensive study of the orders and families of insects. The morphology of insects will be studied from the taxonomic viewpoint. Some attention will be given life histories, adaptations, reactions and ecological problems.
   Reference—"Introduction to Entomology"—Comstock.

ENTOMOLOGY 5 and 6—Economic Entomology—Semester 1 and 2 (Eddy)
   Senior I, Elective: (2 and 2)
   Prerequisite: Entomology 3.
   The first semester includes a study of insect pests attacking field crops and stored products. Opportunity is offered for observations of economic pests in the field and granary, thus familiarizing the students with the work and habits of the important insect pests. Approved methods of control, including cultural practices, poison applications, and fumigation methods are thoroughly treated.
   The work of the second semester is a study of orchard, greenhouse, and also truck and garden insects. The theoretical studies are supplemented by observations of insects under field conditions. Practical work is given in the making of insecticides as well as in applying control measures.
   Text-book: Herrick—"Injurious Insects."

ENTOMOLOGY 7—Insects of Forest and Shade Trees, and Ornamental Shrubs—Semester 1 (Anderson)
   Senior I, Elective: (2 and 2)
   Prerequisite: Entomology 3.
   A study of the more important insects attacking forest, shade and ornamental trees and shrubs; including habits, life-histories and means of control. The laboratory periods will be spent largely in collecting and studying living material.

Entomology 9—Insect Morphology—Semester 1 (Anderson)
   Senior I. Elective: (2 and 2)
   Prerequisite: Entomology 3.
   A study of the internal and external anatomy of insects: the course to include a limited amount of histological technique.
   Reference: "Introduction to Entomology"—Comstock.
Entomology 10—Beekeeping—Semester 2 (Anderson)
Senior I, Elective: (2 and 2)
An introduction into the scientific and economic phases of beekeeping. The college apiary affords the student an opportunity to get first-hand information in the production of both comb and extracted honey.

Entomology 11—Animal Parasitology—Semester 1 (Anderson)
Senior I, Elective: (2 and 2)
Prerequisite: Entomology 3.
A brief review of animal parasites and their relation to the health of man and animals. Lectures, laboratory and field practice in biology and practical problems in sanitation.

Entomology 12—Systematic Entomology—Semester 2 (Sherman)
Senior I, Elective: (1 and 4)
Prerequisite: Entomology 3.
Identification of insects in certain groups to genera and species: field and laboratory practice in collection and preservation of specimens: study of injurious and beneficial habits, and structural adaptations to mode of life. References: Volumes and papers from College and Division Libraries.

Entomology 13 and 14—Entomological Problems—Semesters 1 and 2. (Sherman, Eddy, Anderson)
Senior I, Elective: (1 and 0)
Prerequisite: Entomology 3.
A study of modern Entomological problems, methods and organization on the seminar or round-table basis, with all members of the staff and advance students participating in the program.

Entomology 15 and 16—Minor Investigations and Thesis—Semesters 1 and 2 (Sherman, Eddy, Anderson)
Senior I, Elective:
Prerequisite: Entomology 3.
In exceptional cases credit may be granted on work in preparing a thesis intended to meet a part of the graduation requirements and as a part of the requirements for civil service examinations when the results are findings of the student. The number of credit hours allowed will depend on the nature of the problem, the amount of work involved and the quality of the thesis.
This work should be supplemented by Entomology 13 and 14.
Zoology 22—Ornithology—Semester 2 (Sherman)
Senior I, Elective: (0 and 2)
Prerequisite: Zoology 2.
Field and laboratory study of birds, keeping lists of those identified: consideration of the species, their habits and their relations to human welfare.
References: Chapman's "Birds of Eastern North America." Wyane's "Birds of South Carolina," and other volumes

DIVISION QUARTERS AND EQUIPMENT

General Laboratory and Lecture Room. This large room is on the first floor of Agricultural Hall, and has standard laboratory tables and lockers for general course work. Desks are supplied for advanced students specializing in Entomology and Zoology. Large windows provide excellent light for laboratory work. Necessary microscopes and other equipment for study of laboratory specimens are available.

Divisional Offices. These are located on first floor of Agricultural Hall near the laboratory and lecture room. Here are kept the files, records and library of the division.

Insecticide Laboratory. A well-equipped laboratory on the first floor of Agricultural Hall: equipped for instruction and practice in preparation of standard insecticides and for research work on insecticide problems.

Research Laboratory. This is a large room on first floor Agricultural Hall. Equipment is provided for microscopic technique and general research on entomological and zoological problems. Photographic equipment is available.

Beekeeping Laboratory. This is a small frame building about one-fourth mile northeast of Agricultural Hall which is used for work in beekeeping. Equipment is available for instruction in the fundamentals of modern beekeeping and a small apiary provides opportunity for practice in apiary methods.

Aquarium and Vivarium. The Division has secured the use of a commodious brick building with two large rooms, which is being fitted for keeping live animals and for laboratory and collections. Running water, tanks, and large aquarium, provide facilities for work with aquatic animals; while a screened-off portion of the space, and cages, will provide for other animals. Provision is being made for work-tables, shelves, etc. for rougher laboratory work and storage of collections.
Historical Sketch of Clemson College

Thomas G. Clemson, after whom the College is named, was born in Philadelphia in July, 1807, and died at the Fort Hill home April 6, 1888.

In 1823, then scarcely 16 years old, he ran away from home, and, after spending some time in England, went to Paris, where he took up arms in the revolution of that time. His gallantry brought him recognition and the friendship of prominent men, resulting in his being given a course in the celebrated School of Mines in Paris. In this school he remained four years, graduating with high honors.

While he was in Europe, his father died, leaving nothing to him in his will. Soon after this he returned to America, and establishing himself in Washington, practiced his profession of Mining Engineer, and accumulated a comfortable fortune. It was here that he met Miss Anna Marie, the eldest daughter of John C. Calhoun, and married her. Two children resulted from this union—a daughter, Floride, who afterwards became Mrs. Gideon Lee, of New York, and a son, John Calhoun Clemson.

Mr. Clemson was a strong advocate of the political doctrine of Mr. Calhoun, and when the war broke out, fearing arrest, he and his son escaped by night in a boat, and walking to Richmond, offered their services to President Davis. Mr. Clemson was assigned to the Trans-Mississippi Nitre Mining Department, where he served until the end of the war. His son was appointed a Lieutenant and assigned to active duty.

At the end of the war, Mr. Clemson with his family came to Pendleton and resided with Mrs. John C. Calhoun until her death in 1866.

Mr. Clemson was interested as far back as this date in the establishment of an Agricultural and Industrial College. In November 1866, a Committee was appointed, consisting of Hon. Thomas G. Clemson, Hon. R. F. Simpson and Col. W. A. Hayne, to appeal to their fellow men for

"Aid to found an institution for educating our people in the Sciences, to the end that our Agriculture may be improved, our worn and impoverished soils be recuperated, the great natural resources of the South be developed."
In January 1867, at a meeting of the Pendleton Farmers' Society, Mr. Clemson addressed the body in "an able and most interesting and instructional discourse," and submitted in the form of a circular the appeal above referred to. The circular was written by Mr. W. H. Trescot, and closes with the words:

"Letters and contributions to be directed to the Hon. Thos. G. Clemson, LL.D., Chairman of the Committee, Pendleton, Anderson District, South Carolina."

Again in the minutes of the same Society, of which he was elected President in 1868, under date of Oct. 14, 1869, we find the following:

"The President, (Mr. Clemson), entertained the Society for half an hour on the subject of Scientific Agriculture, and the Importance of Scientific Agricultural Education."

These citations indicate an early interest on the part of Mr. Clemson in the great cause to which he later devoted his estate.

Previous to the war Mrs. John C. Calhoun had sold the Fort Hill place and negroes to her son, Col. Andrew P. Calhoun, taking in payment his bond and mortgage for $40,200.00. At her death, she left a will, deeding to her daughter, Mrs. Clemson, three-fourths of the value of this bond and mortgage, and to her granddaughter, who at the time of Mrs. Calhoun's death was Mrs. Gideon Lee of New York, the remaining one-fourth of the bond and mortgage.

Shortly after Mrs. Calhoun's death, Mrs. Thomas G. Clemson, after considerable costly litigation foreclosed the mortgage on the Fort Hill place, and at the sale of the property in Walhalla in January 1872, Mr. Clemson, as Trustee for his wife and daughter, bid it in for $15,000,* and he himself paid out of his private funds about $8,000 to cover lawyer's fees, court cost, etc.

In 1871, Mr. Clemson's daughter, then Mrs. Gideon Lee, died, and seventeen days later, his only son, John Calhoun Clemson, was killed in a railroad accident at Seneca. Left childless, Mrs. Clemson willed to her husband, Thomas G. Clemson, all of her estate, "absolutely and in fee simple."†

Mr. Clemson, in his will, left to his granddaughter, Floride Isabella Lee, $15,000 to free the property, which by the same will was donated to the State, from any claim in equity that the granddaughter might have. This was, of course, in addition to one-fourth of the estate which descended to Miss Lee from her mother.

Neither by intention, nor by donation, nor by any form of hereditary transmission does it anywhere appear that John C.

* See Title Book, Oconee County, P. 177 f.
† See Judge of Probate's Office, Oconee County, Apartment 26, Package 287.
Calhoun had anything to do with the founding of the College which bears Clemson's name.

In 1875 Mrs. Clemson died, and on April 6, 1888, Mr. Clemson followed her to the grave, and was buried in the Episcopal church yard at Pendleton.

Mr. Clemson's will was bitterly contested by the Lee family, but was finally fully sustained by the U. S. Supreme Court. After the settlement of the will, the Trustees of the College bought from Miss Floride Isabella Lee her one-fourth of the estate which adjoined the tract given to the State by Mr. Clemson.

The following extracts are made from Mr. Clemson's will * in order to show clearly his purpose in offering his property to the State for the founding of the Clemson Agricultural College.

* * * * "Feeling a great sympathy for the farmers of this State, and the difficulties with which they have to contend in their efforts to establish the business of agriculture upon a proper basis, and believing that there can be no permanent improvement in agriculture without a knowledge of those sciences which pertain particularly thereto, I have determined to devote the bulk of my property to the establishment of an Agricultural College upon the Fort Hill Place. My purpose is to establish an Agricultural College which will afford useful information to the farmers and mechanics; therefore it should afford thorough instruction in agriculture and the natural sciences connected therewith; it should combine, if practicable, physical with intellectual education, and should be a high seminary of learning in which the graduate of the common schools can commence, pursue and finish a course of studies terminating in thorough theoretic and practical instruction in those sciences and arts which bear directly upon agriculture. But I desire to state plainly, that I wish the Trustees of said institution to have full authority and power to regulate all matters pertaining to said institution, * * * * but to always bear in mind that the benefits herein sought to be bestowed are intended to benefit agriculture and mechanical industries. * * * * I trust I do not exaggerate the importance of such an institution for developing the material resources of the State, by affording its youth the advantages of scientific culture, and that I do not over-rate the intelligence of the Legislature of South Carolina, ever distinguished for liberality, in assuming that such appropriations will be made as will be necessary to supplement the fund resulting from the bequest herein made."

"I therefore give * * * * the aforesaid Fort Hill place where I now reside, formerly the house of my father-in-law, John C. Calhoun, consisting of eight hundred and fourteen acres, more or less, in trust that whenever the State of South Carolina may accept said property as a donation from me, for the purpose of founding an Agricultural College, in accordance with the views I have hereinbefore expressed, (of which the chief justice of South Carolina shall be the Judge,) then my executor shall execute a deed of the said property to said State and turn over the same all property hereinafter given as an endowment of said institution,

‡ See Judge of Probate's Office, Oconee County, Apartment 64. Package 671.
to be held as such by the said State so long as it in good faith devotes said property to the purpose of the donation." * * * *

"The following named gentlemen, seven in number, shall be seven of the Board of Trustees, to-wit; R. W. Simpson, D. K. Norris, M. L. Donaldson, R. E. Bowen, B. R. Tillman, J. E. Wannamaker, and J. E. Bradley; and the State, if it accepts the donation, shall never increase the Board of Trustees to a number greater than thirteen in all, nor shall the duties of the said Board be taken away or conferred upon any other men or body of men. The seven Trustees appointed by me, shall always have the right, and the power is hereby given them and their successors, which right the Legislature shall never take away or abridge, to fill all vacancies which may occur in their number by death, resignation, refusal to act, or otherwise. But the Legislature may provide as it sees proper for the appointment or election of the other six Trustees, if it accepts the donation. * * * The name of this Institution is to be "The Clemson Agricultural College of South Carolina."

In the codicil to his will, Item 12, occurs the following significant statement:

"The desire to establish such a school or college as I have provided for in my said last will and testament, has existed with me for many years past, and many years ago I determined to devote the bulk of my property to the establishment of an Agricultural School or College. To accomplish this purpose is now the one great desire of my life."

In November 1889, the General Assembly of South Carolina passed the necessary acts authorizing the acceptance of the terms of Mr. Clemson's will, and the establishment of the College. The following extracts are taken from the State laws relating to the College:

Section 1300: "The Honorable Thomas G. Clemson having departed this life on the sixth day of April, A. D. 1888, leaving of force his last will and testament * * * wherein he devised and bequeathed the Fort Hill plantation, as well as all his other property, both real and personal, except certain legacies in the said will mentioned and provided for, all in trust to convey to the State of South Carolina when the said State shall accept the same for the purpose of establishing and maintaining an Agricultural and Mechanical College upon the aforesaid Fort Hill plantation upon the terms and conditions of said will, the State of South Carolina hereby expressly declares that it accepts the devise and bequest of Thomas G. Clemson, subject to the terms and conditions set forth in his last will and testament." * * * *

Section 1302: "The said College shall be under the management and control of a Board of Thirteen Trustees composed of the seven members nominated by said will and their successors and six members to be elected by the Legislature in Joint Assembly."

Section 1304: "That it shall require a two-thirds vote of said Board of Trustees to authorize the expenditure of any moneys appropriated to said College by the State, or to authorize the sale or transfer or re-investment of any property or moneys arising from the sale of any property under the provisions of this Act."
"Section 1319: All the privilege tax on fertilizers heretofore required to be paid to the Commissioner of Agriculture shall in the future be paid to the Treasurer of the State, subject to the order of the Board of Trustees of the Clemson Agricultural College of South Carolina; and so much of the money so received as shall be necessary to defray the expenses of the Board in performing the duties now by this Act devolved upon them shall be thus used, and the balance shall go to the said College, for its erection and maintenance."

It will be seen from the above extracts that the State accepted in good faith the terms of Mr. Clemson's will, features of which were the maintenance of the College, the recognition of the self-perpetuating life membership appointed by Mr. Clemson, and the naming of the College after Mr. Clemson.

In his will Mr. Clemson provides that there should be seven life trustees and that six might be selected by the State. It would seem appropriate to mention that in the appointment of the seven life trustees, Mr. Clemson had two purposes in mind. The State had only recently emerged from negro domination and during a part of that time the doors of the University and of the Citadel had been closed because of the action of a radical legislature admitting negroes as well as whites. Mr. Clemson wished to insure white supremacy in the government of Clemson. Also, at the time he wrote his will, industrial education had no standing with southern educators and the danger of having the college diverted from its purpose into a classical institution loomed large in Mr. Clemson's mind.

At the time of the Act of Acceptance, however, these dangers were overpassed and the Legislature passed the rule that a two-thirds vote of the entire Board of Trustees would be necessary to expend any moneys appropriated to the said college by the State.

This is a historical sketch, not an argument. Whether it were wise to create a separate agricultural and mechanical college located in one corner of the state is now very largely an academic question—likewise it may be a question with some whether the State should have accepted the bequest under the terms of Mr. Clemson's will. In the face of an accomplished fact, logic and lamentation are alike impotent. South Carolinians are more interested in knowing not what might have been done, but what has actually been accomplished. Clemson College itself is the answer to that question.

**HISTORY OF THE COLLEGE**

The College was opened in July 1893, with an enrollment of 446 students. The session extended from the third Thursday in February to the third Thursday in December, with the idea of giving all students in Agriculture an opportunity to be instructed in the practical phases of that subject during the crop-growing season.
On the night of May 22, 1894, the main College building was burned, but the regular work continued, and the building was promptly re-built.

The first graduating exercises were held in December 1896, the graduating class numbering thirty-seven,—fifteen in the Agricultural Courses, and twenty-one in the Engineering Courses. In the fall of 1897, the session was changed to begin in September and close in June, as it had been found inadvisable to operate the College through the hot summer months. The exercises of the second commencement which would normally have occurred in December 1897, were held February 6 to 9, 1898. The undergraduate classes were continued until June. Owing to the change from winter to summer vacation, there was no class graduated in 1897.

By an act of the State Legislature in the session of 1904, and amended in the session of 1907, 165 beneficiary scholarships were established, of the value of $100 per annum each, and free tuition apportioned among the counties as are the members of the Senate and House of Representatives. The number has since been increased to 170, by the creation of five new counties.

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<th>ENROLLMENT</th>
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<td>1924-1925</td>
<td>1155</td>
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<td>1925-1926</td>
<td>1032</td>
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<td>Totals</td>
<td>23415</td>
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</tbody>
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(*) Includes Chemical Engineering.
(**) Includes 13 graduates in Chemistry and Geology.
(*** Courses separated after 1920.

### COLLEGE BUILDINGS AND GROUNDS

**Location.**—The College is located on the Fort Hill homestead of John C. Calhoun, on the dividing line between Oconee and Pickens counties, in the picturesque foothills of the Blue Ridge. It has an elevation of 800 feet above sea level, and commands an ex-
cellent view of the mountains to the north and west, some of which attain an altitude of nearly five thousand feet. The climate is invigorating and healthful, and the surroundings are in every way favorable to the highest physical and mental development.

The College is one mile from Calhoun, a station on the main line of the Southern Railway, and two miles from Cherrys, on the Blue Ridge Railroad. By means of these roads and their connections, the College is easily accessible from all parts of the State. It is connected by telegraph and long-distance telephone with all parts of the country. The post office is conveniently situated on the campus, and receives eight daily mails.

**Grounds.**—The College grounds comprise about 1544 acres, including the campus, the farm, and the Experiment Station grounds. The campus, including about 200 acres, is laid out in walks, drives, and lawns, and is shaded by a beautiful grove of native forest trees. "Bowman Field," lying just in front of the Academic, Textile, and Y. M. C. A. Buildings, provides for part of the military drill.

"Riggs Field," a ten-acre athletic field, the largest and best arranged of its kind in the South, is located to the west of the Y. M. C. A. Building, and provides for baseball, football, track, tennis and military drill.

**ACADEMIC BUILDING**

The Academic Building is a three-story brick structure, 100 by 132 feet, trimmed with gray sandstone. It contains 36 rooms, including recitation rooms, library and reading rooms, literary society halls, and the offices of the President, the Registrar, the Commandant, the Treasurer, the Director of Student Affairs, the Alumni Secretary, and the Director of Athletics. The public Telegraph Office is on the ground floor of this building. Adjoining this building is Memorial Hall, the College Chapel, which has a seating capacity of about eighteen hundred. It is used for religious service and as an assembly room. In the basement are the class rooms and laboratories of the physics division. The entire building is provided with steam heat and electric lights.

**AGRICULTURAL HALL** *

The Agricultural Hall is a building 146 by 94 feet, in colonial style, and constructed of red side-cut brick, with columns and trimmings in oolitic limestone. It is furnished with a complete system of electric lights, water and sewer connection, and steam heat; provides class rooms and laboratories for instruction in agriculture, soil physics, botany and bacteriology, zoology and entomo-  

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*Burned April 2, 1925. To be rebuilt 1925-1926.
logy, geology and mineralogy, and offices and laboratories for the Experiment Station. It also contains the Experiment Station library, the museum and gymnasium hall.

ENGINEERING BUILDING

The engineering building is a substantial brick structure containing about 38,000 square feet of floor space. On the first floor are the civil engineering division, testing laboratories, machine shop, wood shop, forge shop, and foundry. On the second floor are the offices, classrooms and the engineering drafting and designing rooms. The third floor is devoted to architecture.

ELECTRICAL ENGINEERING LABORATORIES

A one-story brick building designed for delicate instrument work, contains the instrument laboratory, the standardizing laboratory, room for storing instruments, supply room, and the division office. Adjoining the above is another single story brick building which contains the lecture room 25 by 35 feet (equipped with raised seats); the dynamo laboratory 35 by 53 feet; and large dark room and supply room.

TEXTILE BUILDING

This building is a brick structure of modern cotton mill design, 168 by 75 feet. It is of the slow-burning type, built according to fire insurance regulations, after plans of an experienced mill engineer. The building, although designed for educational and experimental purposes, containing office, lecture rooms and laboratories, retains the more prominent features of a typical Southern cotton mill. This affords the student an opportunity of gaining many points of valuable information in connection with mill construction, along with the manipulation of cotton fibres and the study of cotton mill processes and operations.

The Printery, which is located in the south basement of the Textile building, is equipped as follows: One Miehle two-revolution printing press, 30 by 42-inch bed; three Chandler & Price job presses; one Chandler & Price cutter; one Morrison stitcher; two perforators; one letter folder; two Hammond cabinets; two imposing stones; one No. 5 model linotype machine and one No. 14, Single key-board, linotype machine with supply of matrices for same; and one Automatic Miller Feeder and a supply of type, furniture, etc. All the machines are driven by individual motors. The College reports, bulletins and miscellaneous stationery are printed here.
CHEMISTRY BUILDINGS

Two substantial brick buildings of about the same dimensions, each consisting of two stories and a basement, and connected on the first and second floors by glass-covered passageways, are devoted to chemical work. The north building serves partly for academic work and partly for the analytical work of the Fertilizer Analysis Division of the Public State Work of the college. The entire south building is devoted to academic work. Both buildings are well ventilated, heated by steam, and lighted by electricity.

FERTILIZER BUILDING

This is a three-story brick building, situated near the south chemistry building, and containing the offices of the Secretary of the Board of Fertilizer Control, fertilizer tag rooms, etc. The Clemson College Post Office occupies the ground floor of this building.

VETERINARY HOSPITAL

The Veterinary Hospital is a two-story frame building 48 by 65 feet, with basement 18 by 30 feet. It is furnished with electric lights, hot and cold water, and is heated by means of stoves. The basement contains a store room. The class room, office, pharmacy, and a well-equipped clinic and operating room are on the first floor. A laboratory for class work, a private laboratory and a store room for supplies are on the second floor.

DAIRY BUILDING

The Dairy Building is constructed of red brick trimmed with lime-stone. In addition to class rooms and laboratories it contains the offices of the following divisions: Animal Husbandry, Dairy, Horticulture, and Education. It is equipped with modern machinery for the manufacture of butter, ice cream and other dairy products, and for teaching modern methods of dairying.

DAIRY BARN

The Dairy Barn will accommodate both the Experiment Station and College herds. It is large enough to house 120 cows and all the feed required for these animals. It has separate box stalls for bulls and young stock. The floors are of cement, and cork brick is used on the floors where the cattle lie. The lighting, ventilation, sanitation, stanchions, stalls, and the equipment for cleaning and feeding are of the most modern type to be found in the country. The milk is handled carefully in accordance with the best practice and experience of modern dairy methods. Nearby is a calf barn and a hog barn embodying the most recent improvements in such build-
ings. There are also four large cement silos conveniently located, where the stock feed is kept to supply these barns.

Y. M. C. A. BUILDING

This building is in the Italian Renaissance style of architecture, of texture brick with colored tile inserts, terra cotta trimmings, and red tile roof. The interior finish is of stained yellow pine. It contains four floors—basement, mezzanine, first floor, and dormitory floor, giving a total of thirty-six thousand square feet of floor space. It is lighted by the indirect system, and has steam heat and modern water facilities.

The basement contains a basket-ball room, kitchen, quick lunch room, private dining room, general confectionery store and soda fountain, two bowling alleys, swimming-pool, shower and locker rooms, and general toilet.

The mezzanine floor is given over principally to committee rooms, retiring rooms, and balconies.

On the first floor are the general offices, reading, games, and lounging rooms, a ladies’ club room and an auditorium. The dormitory floor has thirteen living rooms, a literary society hall, a masonic lodge room, and motion picture machine facilities.

The building is handsomely furnished and equipped to make a large contribution to the religious, social, and physical life of the student body and the community.

RESIDENCES

Nine brick and fifty-nine frame residences, situated on the campus, furnish homes for most of the college teachers and officers.

BARRACKS

The cadet barracks comprise three large brick buildings. One is four stories high and contains 247 rooms for students. In the basement of this building is the dining hall 170 by 44 feet and the kitchen 50 by 37 feet. The second building is 199 by 42 feet, and contains 104 rooms. The third building is 45 by 190 feet and contains 111 rooms.

These buildings are heated by steam and lighted by electricity, and have an abundant supply of pure water. The rooms in the barracks are furnished with single-width iron cots and other necessary appointments. The dining hall is well supplied with table linen, silverware, and china, and the kitchen is furnished with modern culinary appliances.

The bathrooms and toilets are in general, located in brick buildings apart from the barracks and connected with them by covered gangways.
CALHOUN MANSION

The former residence of John C. Calhoun, is kept in honor of his memory, in accordance with the provisions of Mr. Clemson's will.

The Calhoun Relics.—Several pieces of furniture and other interesting relics, formerly the property of Mr. Calhoun, are carefully preserved in the Calhoun Mansion, where they may be seen by visitors to the College.

CLEMSOX COLLEGE HOTEL

The Hotel, a frame building with one eight-room annex, situated on a hill overlooking the campus, is operated by the College. In addition to furnishing a home for many officers and teachers, it is open the entire year to a limited number of transients.

HOSPITAL

The Hospital, located about a quarter of a mile from the barracks, is a wooden building, especially designed for the purpose. It is lighted by electricity, and has a thorough sewerage system. It is in the immediate charge of the Surgeon, who is assisted by an experienced matron and nurse, thus insuring the best personal attention to each patient.

LAUNDRY

This is a brick-building especially constructed and fitted with the improved machinery of a modern steam laundry, and is operated exclusively for the students.

FARM BUILDINGS

The College farm is provided with commodious barns and other farm buildings of modern design, which are described more fully in connection with the equipment for instruction in agronomy.

HORTICULTURAL GROUNDS

The Ornamental Horticultural Grounds are situated south east of the campus. Their acreage is devoted to the growing of various trees, shrubs, and flowers, and affords a beautiful park area as well as a small ornamental nursery. The Experimental Horticultural Grounds are located east of the campus and comprise about twenty acres. This area is devoted to experiments with apples, peaches, grapes, pecans, and small fruits. Vegetable and truck crop experiments are conducted in a fertile bottom along the banks of the Seneca River, about one mile south west of the campus.

The Cannery, a building 25 by 35 feet, is situated in the Horticultural Grounds. It is equipped for canning fruits and vegetables of all kinds.
Greenhouses.—The old greenhouse, 21 by 140 feet, and containing one thousand large pot-plants of various kinds and six thousand small pot-plants, is situated in the Horticultural Grounds.

The new greenhouse, containing a central room 30 by 30 feet, and two wings, each 20 by 30 feet, occupies a prominent place in the center of the campus.

Both are used for experiment work and class instruction in horticulture, botany, etc.

PUBLIC UTILITIES

The General Water Supply is taken from Hunnicutt Creek about three-quarters of a mile above the pump station. The water flows by gravity to a settling basin 36 feet by 36 feet, from there through two gravity filters having a capacity of three hundred and fifty gallons per minute. The filtered water passes to a storage reservoir from which it is pumped into a stand pipe one hundred feet high having a capacity of 130,000 gallons. From this it is distributed from the main to the various college buildings and to all parts of the campus. This water is tested regularly to see that it is kept free from all contaminations.

The Drinking Water Supply is pumped from a bold spring in a continuous stream through the barracks. It is thus furnished fresh, pure and cold. This and all sources of water supply are kept under constant and strict surveillance and the waters are frequently analyzed as a precaution against contamination.

The Sewer System.—All of the larger buildings and most of the residences are connected with an adequate sewer system, which empties into the Seneca River more than half a mile from the campus.

LIGHT AND HEAT

All of the college buildings and residences on the campus are lighted by electricity furnished from the central power station. The principal college buildings are heated by steam.

Refrigerating Plant.—In connection with the commissary there is a refrigerating plant consisting of the following: One 6-ton Frick double-cylinder compressor supplied with gauges, etc.; one double-pipe condenser; one triple-pipe brine cooler; 25 cans of 50 pounds capacity each, and a brine reservoir for use in ice-making or refrigeration. The following rooms are cooled by the plant; One room 12 by 13 feet for general storage, one 6 by 8 feet for milk and butter, one 6 by 8 feet for fruit and vegetables, one 6 by 12 feet for meat, and two rooms 6 by 6 feet each, in charge of the Chef, and used for storage of supplies intransit to dining hall.
POWER STATION

The central power and heating plant contains two 150-hp. Stirling water-tube boilers, and two 100-hp. Lombard return tubular boilers, two Babcock and Wilcox 150-hp. water-tube boilers with the necessary pumps, feed water heaters, and other auxiliary apparatus.

The power equipment consists of one 114-kw. Fleming sidecrank engine with unaflooy cylinder direct connected to a 70 kw, 2,300-volt, three phase alternator, with direct connected exciter, and one 122-hp. Fleming four-valve engine, direct connected to a three-wire 75-kw., direct-current generator, one 200 kw. turbo-generator two stage, 2,300 volt, 3-phase alternating current with direct connected exciter.

A 75-kw. rotary converter is used to convert from one kind of service to another.

The switchboard equipment consists of three standard blue Vermont marble panels, and five black enameled slate panels, all equipped with the latest and best electrical instruments and appliances. The alternators are connected to the rotary converter through three 25-kw. transformers. All the machinery is of the General Electric Company make.

The building is 40 by 108 feet, is a single story of brick and cement blocks, with metal roof.

The plant complete cost about $53,000.00, and is in every way modern and up-to-date. It furnishes steam heat for the barracks and other college buildings, and electric lights and power to every department of the college and residences of the community. The pumping station, situated about one-half mile distant, is electrically operated from this plant. This pumping plant has both steam and electric pumps and an aggregate capacity of 1,100 gallons per minute.

Library—The general library and reference library are located on the second floor of the Academic Building. The Experiment Station Library is located in the Agricultural Building. A reference library is also maintained by the Chemical Department.

There are now approximately 30,400 volumes and approximately 10,000 public documents and government publications. About 25,000 pamphlets are available for reference. In connection with the libraries are suitable reading rooms. There are approximately 300 periodicals accessible to the students.

In the general library are thirty-seven oil paintings collected by Mr. Clemson chiefly in Holland, together with a number of portraits.
Clemson College Alumni Association

The Alumni Association has established a permanent office on the main building on the campus. This office is in charge of a full-time secretary, who is employed by the Governing Board of the Association. The Clemson office is a clearing house for all matters concerning the alumni. In addition to keeping accurate records of addresses and information concerning alumni, the Association has established at the Clemson headquarters a bureau for repairing Clemson Class rings, and for securing duplicates of these rings.

The Association holds its regular annual meetings at the college on Monday of commencement week. At this meeting all officers, with the exception of the secretary, are elected. The secretary, is elected by the Governing Board which is in turn responsible to the general Association for the conduct of its business. The purpose of the Alumni Association is to serve the college and the alumni in every possible way. All correspondence regarding its affairs is conducted through the Clemson office.

The Clemson Alumnus, a monthly publication, is the official organ of the Association and is mailed to graduates whose addresses are on file with the Association.

Officers of the Association

E. R. McIver, '05, President.
S. R. Perrin, '07, First Vice-President.
G. M. Armstrong, '14, Second Vice-President.
S. M. Ward, Jr., '02, Third Vice-President.
E. G. Parker, '24, Secretary-Treasurer.

Governing Board

A. H. Ward, '14, Term Expires 1930.
E. N. Sitton, '11, Term expires 1929.
R. B. Waters, '16, Term expires 1928.
H. C. Wannamaker, '16, Term expires 1927.
H. S. Johnson, '10, Term expires 1926.
E. R. McIver, '05, Ex-officio.
E. G. Parker, '24, Ex-officio.

The Summer School

In the future the Clemson College Summer School will emphasize only such courses as relate directly to agriculture and to agricultural and industrial education. These courses will include both graduate and under-graduate work in education and are designed
especially for teachers of agriculture, science and industrial arts, and heads of schools. College credit will be given for work successfully completed in the regular six weeks summer school. A few under-graduate courses in agronomy and horticulture will be offered in 1926.

EDUCATION

Profs. Crandall, Washington Ayers, Jones, and Tate
Special Methods in Teaching Agriculture.
Educational Psychology.
Principles of Teaching.
Vocational Guidance.
Industrial Arts.
Problems of Rural School Principles.
Program of Work for Part-Time Continuation Teaching.
Program of Work for Teachers of Textiles in Evening Classes.
Program of Work for Industrial Teachers of Part-time Classes.
Program of Work for Shop Teachers.
Program of Work for Teachers in Vocational Schools.
General Agriculture.

HORTICULTURE AND AGRONOMY.

Profs. Newman and Collings
Field Crops.
Fertilizers.
Elementary Horticulture.
Gardening.
Landscape Gardening.

ANIMAL HUSBANDRY.

Prof. Morgan

Poultry Husbandry.

PART VIII.—PUBLIC SERVICE

THE AGRICULTURAL EXTENSION SERVICE

The agricultural extension work of the college is carried on by the Extension Service in co-operation with the United States Department of Agriculture. The work is supported by Federal appropriations and in part by State and County appropriations. The main development of extension work has come since the enactment of the Smith-Lever Act in 1914. The purpose of Extension work is to
instruct farmers of the state in the practical application of the principles of improved agriculture, in both production and marketing. A staff of specialists, some of whom are also members of the Agricultural Faculty, assist the county agents in planning and carrying out demonstrations with farmers over the state.

Publications.—A large number of publications, including bulletins, circulars, posters, and information cards, are distributed annually. The Weekly News Notes is published to carry matters of timely and practical interest to the editors and a few farmers of the state. A free press plate service is also furnished to those papers requesting it. In addition to this, news letters are issued on an average of three times per week and these are sent only to the newspapers. Monthly letters or printed circulars on poultry, orchards, gardening, dairying and boys club work are mailed free to those persons especially interested in these subjects.

County Agents.—Every county in the state, by co-operation in providing the finances, may have a county agent. These agents are agricultural college graduates who have had practical farm experience. They devote their time to instructing farmers through demonstrations, personal conferences, meetings, community organizations, publications and letters.

Home Economics Work.—This work is carried on under the immediate supervision of Winthrop College. It is, however, a part of the Extension work under the Smith-Lever Act, and as such is under the general direction of the Extension Service. Nearly every county is provided with one home demonstration agent in the same way that they are provided with county agents.

Negro Demonstration.—A few negro local agents are employed to work with the negro farmers of the state in sections where the negro population is great. These agents are employed in co-operation with the State College at Orangeburg, and the President of the State College acts as District Supervising Agent.

Live Stock.—Work in this project is carried on with the idea of promoting the live stock interest of the state along sound permanent lines, and much progress has been made during recent years especially with hogs. The remarkable increase in the number of hogs is no greater than the increase in quality. Those desiring to purchase pure breeds can now, in most cases secure them within the state from breeders who have been assisted by the Extension Service. Live stock agents have also stimulated the growing of pastures and forage crops and have assisted in the feeding and marketing of cattle and the co-operative purchase of fencing materials.

Dairying.—The Extension dairymen devote their time chiefly to development work such as bull associations, feed campaigns, dairy
schools, construction of silos, barns, purchase of dairy cattle and the testing and improvement of herds. This state now ranks second in the United States in number of co-operative bull associations. The time has come when farmers wishing to purchase purebred dairy cattle can obtain first class animals within the state and very few importations are necessary.

Corn and Cotton Breeding.—Variety tests of corn and cotton are conducted in a dozen localities in the state along with demonstrations in the field selection of corn and cotton. Up to date this work has resulted in showing what varieties of corn and cotton are best adapted to different sections of the state, and farmers are generally planting those varieties. A number of communities are being given assistance in organizing for growing only one variety of cotton and one of corn.

Orchards, Gardens and Potato Storage Houses.—Orchard demonstrations, potato storage houses, home gardens and co-operative canneries are the principal lines of work developed by the Extension horticulturists. The results obtained in the last few years along these lines are far reaching, and point the way for the proper utilization of some of our acres under boll weevil conditions.

Poultry Work.—The plan is to establish and develop representative poultry plants in a number of counties in the state. These furnish reliable breeding centers from which pure bred poultry of popular breeds can be secured at reasonable prices by farmers and others. The wisdom of increasing the size and quality of farm flock is now being emphasized, together with efficiency in marketing poultry products.

Marketing.—Efforts are made to secure convenient and profitable marketing arrangements for the various crops of the state. The organization of co-operative marketing associations is being encouraged. Proper grading and loading for shipment are stressed, particularly where farmers are just beginning to produce a new crop. Shipping point inspection has been provided in cooperation with the Federal Bureau of Agriculture Economics for the protection of shippers of certain perishable crops.

Entomology.—There are two principal lines of this work; first boll weevil work, and second, bee keeping work. One specialist is employed who gives a part of his time to the boll weevil work, instructing farmers as to the life history, habits, etc., of the weevil and control measures.

A specialist in bee keeping is employed to develop this industry and it has been found that this state has great possibilities along this line.

Boys' Club Work and Short Course.—Boys agricultural clubs are organized with the idea of enlisting the intelligent interest of
the boys, and through them their parents, in improved methods of agriculture. To the winners of certain contests short courses are provided at the College during the summer months.

Organizations.—Whenever conditions are suitable for community organizations, these are encouraged and the full support of the Extension Service is lent towards making them successful.

Extension Service Staff

W. W. LONG .................................................. Director
D. W. WATKINS ............................................. Assistant Director
L. V. STARKEY .............................................. Chief, Animal Husbandry Division
E. G. GODBEY...Extension Livestock Specialist, Spartanburg, S. C.
L. R. HAWKINS, ............................................. Livestock Agent, Florence, S. C.
J. P. LaMASTER, ............................................ Chief, Dairy Division
R. E. WATERS ... Extension Agent in Dairying, Spartanburg S. C.
W. J. KEEGAN, ........ Extension Agent in Dairying, Florence, S. C.
T. S. BUIE, .................................................. Acting Chief, Agronomy Division
J. L. CARBERY, Extension Agronomist (plant breeding) Spartanburg, S. C.
H. H. TRYON .................................................. Forestry Engineer, Aiken, S. C.
S. L. JEFFORDS, Extension Agronomist (forage crops) Spartanburg, S. C.
C. C. NEWMAN, ............................................. Chief, Horticultural Division
A. E. SCHILLETTER .................................... Extension Horticulturist
E. H. RAWL, .............................................. Extension Horticulturist
D. H. HALL, .................................................. Extension Poultry Specialist
L. H. LEWIS, ........ Extension Agent in Marketing, Florence, S. C.
J. K. HAMILTON ... Extension Agronomist, Aiken, S. C.
J. J. PEPPER .............................................. Extension Entomologist, Clemson
C. A. OWENS ... Specialist in Packing and Grading, Spartanburg
FRANKLIN SHERMAN ................ Chief, Division of Entomology
E. S. PREVOST, ............................................. Bee Keeping Specialist
*W. D. MOORE, .............................................. Extension Plant Pathologist
B. O. WILLIAMS ............................................ Agent Boys’ Club Work
L. D. LEWIS, .............................................. Agent Boys’ Club Work
A. B. BRYAN, ............................................... Agricultural Editor
HAZEL COVER COLLINGS...Acting Assistant Agricultural Editor

*On leave
## District Agents

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## County Agents

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THE SOUTH CAROLINA AGRICULTURAL EXPERIMENT STATION

The Agricultural Experiment Station of South Carolina is a department of Clemson College. The experiment station at present consists of the main station, which is located at Clemson, and two sub-stations, one in the coast region, located at Summerville, and one in the Pee Dee section, located at Florence. The main offices and laboratories of the station are located on the Clemson College Campus, while the station experiment farm, consisting of about 200 acres, is east of and adjoining the college campus. The investigations dealing with the fundamental principles of agricultural sciences and with the application of such principles to practical agricultural operations are carried on in the laboratories and on the experiment station farm at Clemson. The experiments looking to the adaptation of such scientific data accumulated here and elsewhere to the conditions peculiar to certain sections of the State are carried on at the sub-stations and at branch laboratories established in certain sections of the State for this purpose.

It is the aim of the experiment station to carry on research work on problems which have a direct practical bearing on the agriculture of the State. With this end in view elaborate experiments relative to the best methods of procedure under various conditions with the principal plants and animals have been undertaken. As progress is made with such experiments the results obtained are given out to farmers in the form of bulletins, circulars and personal letters. Since the establishment of the station 225 such bulletins and 33 circulars have been published, covering practically all phases of agriculture.

Aside from the research work and the publication of results obtained from such research the experiment station performs various other duties. Among these might be mentioned the entomological and pathological inspection work which aims to protect the farms, orchards and gardens of the State against the introduction of injurious insects and diseases; the biological and soil survey of the State; and the cooperative experimental work carried on with hundreds of farmers in the State. The technically trained experts of the station staff are regarded as authorities in their several specialties and they are constantly giving out information relating to the various lines of agricultural endeavor. More than fourteen thousand personal and circular letters are written annually to residents of the State giving technical information to individuals on special subjects. The station staff also aids in disseminating agricultural knowledge by cooperating with the Extension Service of the college in holding agricultural meetings and conferences and by meet-
ing with the farm demonstration agents and giving to them technical information which they in turn carry through the demonstration work direct to the farmers.

Close cooperation is maintained with the various research bureaus of the National Department of Agriculture and with the departments of the college. The laboratories are always open to the inspection of the students and other people of the State. The same is true of the experiment station farm. There is always opportunity for a limited number of students to secure work in the various divisions of the station and to assist in the research work carried on by the members of the station staff.

A full report of the work and expenditures of the Experiment Station is published annually and this report and all other publications of the station are free and will be sent on request. Requests for these should be addressed to H. W. Barre, Director, Clemson College, S. C.

Cooperative Experimental Work.—This work is carried on under the supervision of the Director of the Experiment Station. Many farmers are enrolled in this important line, which includes a repetition of many of the experiments conducted at the parent experiment station located at the college. Co-operative experimental work is intended to verify new facts and laws under the various soil and climatic conditions in South Carolina.

Branch Experiment Stations.—In order to reinforce the main experiment station located at the college, two additional branch stations have already been established, one at Drainland in the coastal plain, and another near Florence, in the Pee Dee section. It is planned to locate a third station in the Sand Hill section of the State as soon as the college has funds for this extension.

The Boll Weevil Control.—Laboratories are located at the Pee Dee station in Florence. This work is carried out in cooperation with the U. S. Department of Agriculture and is of untold value to the state.

These stations are devoted primarily to experimental work. They also form centers of dissemination for the information which the college has to give to the people.
EXPERIMENT STATION STAFF

H. W. BARRE, A. M., Botanist and Director.
C. C. NEWMAN, B. S., Horticulurist.
A. B. BRYAN, B. S., B. Litt., Agricultural Editor.
L. V. STARKEY, M. S., Animal Husbandman.
J. P. LaMASTER, B. S., Agr., Dairyman.
R. N. BRACKETT, Ph. D., Chemist.
FRANKLIN SHERMAN, M. S., Entomologist.
C. S. PATRICK, B. S., Head Farms Division.
R. E. CURRIN, Supt. of Pee Dee Experiment Station, Florence, S. C.
J. A. RILEY, M. S., Supt. of Coast Experiment Station, Summerville, S. C.
G. M. ARMSTRONG, Ph. D., Head of Division of Boll Weevil Control, Florence, S. C.
J. H. MITCHELL, M. S., Chemist.
C. A. LUDWIG, Ph. D., Associate Botanist and Plant Pathologist.
G. H. AULL, B. S., Assistant to Director of Research.
T. S. BUIE, B. S., Acting Head Agronomy Division.
J. A. BERLY, B. S., Associate Horticulturist.
E. E. HALL, M. S., Agronomist Boll Weevil Control, Florence, S. C.
W. B. ROGERS, B. S., Assistant Agronomist.
C. B. NICKELS, M. S., Research Assistant Entomologist.
E. D. KYZER, B. S., Research Assistant, Florence, S. C.
G. H. AULL, B. S., Assistant to Director of Research.
W. C. JENSEN, M. S., Specialist in Agricultural Economics.
R. W. MORELAND, M. S., Assistant Entomologist*, Florence, S. C.
F. A. FENTON, Ph. D., Entomologist Boll Weevil Control*, Florence, S. C.
B. A. RUSSELL, M. S., Assistant in Farm Economics.
E. W. DUNNAM, M. S., Assistant Entomologist, Boll Weevil Control*, Florence, S. C.
J. D. WARNER, M. S., Assistant Agronomist.
K. S. MORROW, M. S., Assistant Dairyman.
A. L. DuRANT, M. S., Assistant Animal Husbandman.
C. O. EDDY, M. S., Associate Entomologist.
L. M. FENNER, M. S., Assistant Pathologist†
O. L. CARTWRIGHT, M. S., Assistant Entomologist.
BURNS GILLISON, Foreman Experiment Station Farm.

*Detailed by United States Department of Agriculture.
†S. C. State Crop Pest Commission.
Mail and Telegraph Offices: Clemson College, S. C.
Freight and Express Offices: Calhoun, S. C.
The bulletins and circulars of the Station are issued at irregular intervals and are sent free to all citizens of the state who apply for them.
LIVESTOCK SANITARY WORK

The Clemson College Live Stock Sanitary Office is a department of Clemson College and is under the supervision of the Agricultural Committee of the Board of Trustees. This office is located in Columbia, S. C., in order that the best interests of the livestock industry may be served, and is in charge of the State Veterinarian, Dr. W. K. Lewis, who is also Director of this Department.

The principal functions of this office are: Tick Eradication, Tuberculosis Eradication and Hog Cholera Control. In addition to these, all reported outbreaks of contagious, infectious and communicable diseases of live stock are investigated, and measures recommended for the control and eradication of the specific condition; and quarantine is maintained against the introduction of diseased livestock into the State.

The Columbia office has recently established a fully equipped laboratory for bacteriological and pathological work, in order that proper and prompt diagnosis of certain diseases may be made. Parasitic research work will be conducted in various sections of the State in connection with the Columbia laboratory.

In addition to the force of veterinarians working out from the Columbia office, Assistant State Veterinarians are located at strategical points in the State so as to be readily available to the farmers in their respective territories.

On July 1, 1925, twenty-two (22) practicing veterinarians of the State were commissioned as Deputy State Veterinarians, to assist the State Veterinarian in the control and eradication of contagious and infectious diseases of livestock. The Deputy State Veterinarians are located principally in the northern and eastern sections of the State, and with the Assistant State Veterinarians located in the middle and southern sections of the State, the Clemson College Live Stock Sanitary Office is in position to render a service to the livestock industry of the State in keeping with its development and maintain the service to the highest degree of efficiency.

The Clemson College Live Stock Sanitary Office also maintains an equipment for handling large stocks of anti-hog cholera serum, virus and veterinary biologics and furnishes these products to the citizens of the State at cost, thereby effecting a saving to them of several thousands of dollars annually.

The live stock sanitary work is required by legislative enactment and is supported by legislative appropriations.

The Bureau of Animal Industry, U. S. Department of Agriculture, co-operates in Tick Eradication, Tuberculosis Eradication, and Hog Cholera Control, and duplicates the amounts appropriated by the State Legislature for these projects.
List of employees engaged in livestock sanitary work:—
State Veterinarian and Director.—W. K. Lewis.
Laboratory Veterinarian.—R. A. Mays.

Clerks.—R. K. Donly, J. E. Wilson, J. M. Leaphart.

MISCELLANEOUS PUBLIC SERVICE
Fertilizer Inspection and Analysis.—The work of fertilizer inspection and analysis is under the supervision of the Board of Control consisting of ex-Governor Richard I. Manning, chairman J. E. Wannamaker of St. Matthews, J. J. Evans, Bennettsville. The work of inspection is under the immediate supervision of H. M. Stackhouse, Secretary of the Board of Control.

There are inspectors to look after this feature of the work in different parts of the State.

The work of analysis is carried on in the Fertilizer Analysis Division of the Chemical Department and is under the supervision and direction of Dr. R. N. Brackett, Chief Chemist.

The work consists of the analysis of commercial fertilizers as provided for by the Fertilizer Law of the State. This Division also undertakes the analysis of waters, ores, minerals, and other naturally occurring materials, except soils (which are analysed by the Experiment Station), portions of human bodies in cases of suspected poisoning, as provided for by law, and the analysis of home-mixed fertilizers. All the work of this Division is done free of charge.

Entomological and Pathological Inspection.—This work is carried on under the direction of the State Crop Pest Commission.

The State Entomologist is Prof. F. Sherman, head of the division of Entomology, and the State Pathologist is H. W. Barre, head of the division of Botany and Bacteriology.

The work of these officers consists of the control of contagious plant diseases and insect pests. The State Entomologist has also supervision of all nursery stock sold within the State.
A permit tag issued by the State Crop Pest Commission should be attached to every package of nursery stock seed or plants offered for sale or shipment for planting purposes.

**Agricultural and Textile Scholarships.**—The college maintains 170 four-year agricultural and textile scholarships, and fifty-two one-year agricultural scholarships. Each scholarship is worth $100 and free tuition. The cost of these scholarships is paid out of the fertilizer tax, as the State makes no appropriation therefor. The annual cost of these scholarships, including advertising, expense of holding examinations, etc., is about $20,000.00.

**School Houses.**—The college also furnishes free plans and specifications for rural school buildings to school trustees desiring to erect a new school house, and will advise and furnish drawings for alterations of old school houses. This work was undertaken at the request of and under the direction of the State Superintendent of Education. Further information and a copy of a bulletin on "Rural School Buildings" will be furnished by Rudolph E. Lee, college architect, upon request.

**Miscellaneous.**—In addition to the above regular lines of activity, the College manufactures at cost the South Carolina flag in a number of different sizes, makes annually an exhibit at the State Fair, and engages in other miscellaneous activities.
PART IX.—REGISTER
The Corps of Cadets.
1925-1926.

UNITED STATES ARMY PERSONNEL.

Lieutenant Colonel Otis R. Cole .......................... Infantry.
Captain Henry W. Lee .......................... U. S. A. Retired
Captain Arthur W. Penrose .......................... Infantry.
Captain Ernest A. Higgins .......................... Infantry.
First Lieutenant Richard W. Johnson .......................... Infantry.
First Lieutenant Paul G. Balcar .......................... Infantry.
First Sergeant Jesse M. Peck .......................... Detached Enlisted Men's List
Sergeant Archie D. Stern .......................... Detached Enlisted Men's List.
Sergeant Gilbert E. Naramor .......................... Detached Enlisted Men's List

CADET REGIMENTAL ORGANIZATION.

Colonel G. I. Finklea
Lieutenant Colonel W. J. Douglas
Captain J. B. Caughman, Adjutant
Captain W. R. Roy, Supply Officer
Captain W. W. Bryan, Intelligence Officer
Captain E. H. Jordan, Chaplain
First Lieut. E. T. Smith, C. O. of Drum and Bugle Corps
Master Sergeant J. H. Baker, (Reg't. Sgt. Major)
Master Seageant L. A. Seaborn, (Reg't 1. Sup. Sgt.)
Color Seageant C. C. Newman
Color Seageant J. A. Warren

BAND

Captain .................................................. D. R. Ergle.
First Lieutenant ........................................ H. E. Gaffney.
First Lieutenant ........................................ P. Strickland.
Second Lieutenant ...................................... G. W. Gignillant.
Drum Major ............................................. J. R. Cooper.
Seargeant ................................................ W. C. Brown.
Seageant ............................................... L. E. Cromer.
Corporal ................................................ J. H. Clarke.
Corporal ............................................... W. C. Hutchins.
Corporal ........................................... G. G. Simmons.
Corporal ............................................. W. P. Timmerman.
REGIMENTAL ORGANIZATIONS

FIRST BATTALION

Major ................................................................. J. E. Westbury
First Lieutenant, Adjutant ........................................... T. G. Jackson
Staff Sergeant ....................................................... F. J. Fishburne

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<td>Trimmier, L. G.</td>
<td>McKerley, J. B.</td>
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CAPTAINS

| Thackston, A. J. | White, W. J. | Hendrix, S. H. | Walker, J. E. |
| Smith, B. M. | Shands, W. A. | Smith, G. A. | Powles, H. J. |

FIRST LIEUTENANTS

| Hinson, H. S. | Foster, R. M. | Evans, J. K. | Hane, W. W. |
| McGee, E. T. | Smyth, J. A. | Boyd, J. K. | Hane, J. K. |

SECOND LIEUTENANTS

| Ross, D. H. | Parler, M. L. | McTeer, J. R. | Greene, J. W. |

FIRST SERGEANTS

| Brock, J. L. | Cain, R. H. | Felder, J. C. | Cureton, R. H. |
| Kershaw, J. | Hicks, M. H. | Caughman, E. M. | Herron, J. L. |
| Gibson, D. A. | James, J. H. | Donaldson, J. H. | Hinnant, J. L. |
| Russell, H. E. | Stoutemire, H. L. | Hendrix, J. H. | Rose, A. |
| Sams, R. O. | Smith, C. T. | Youngblood, J. E. | Scott, J. T. |

SERGEANTS

| Davidson, L. S. | Allison, H. M. | Berry, L. E. | Cato, J. B. |
| Glaze, C. H. | Bell, J. L. | Dozier, J. P. | Bryan, C. A. |
| Green, C. D. | James, W. C. | Eadie, M. D. | Clark, W. H. |
| McCutchin, G. H. | Jones, J. A. | Ginn, R. J. | Fowler, B. R. |
| Pickens, R. O. | Hicks, J. O. | James, F. G. | Hewlett, L. M. |
| Sanders, H. I. | Parker, W. E. | Taylor, H. K. | Maner, W. F. |
| Waller, P. F. W. | Pruett, W. R. | Watson, E. G. | Rutledge, J. R. |
| | Williams, W. T. | Wingard, B. F. | Stewart, T. C. |
Clemson College

Second Battalion

Major ............................................. E. R. Alexander
First Lieutenant, Adjutant .................................... J. M. Law
Staff Sergeant ................................................................. R. H. Mitchell

Co. E  Co. F  Co. G  Co. H

Captains

Wells, S. F.  Garrison, N. A.  McGill, N. A.  Sanders, J. H.

First Lieutenants

Fewell, J. A.  Sudlow, W. H.  Cobb, C. N.  Pauling, J. R.

Second Lieutenants

Smith, R. E.  Darby, J. M.  Pruitt, J. M.  Palmer, E. D.

First Sergeants

Milling, J. A.  Bradham, H. K.  West, C. P.  Marshall, R. M.

Sergeants

Martin, W. T.  McDaniel, S. W.  Little, T. R.  Carter, T. H.
Reynolds, C. M.  Pickelsimer, D. L.  Rogers C. M.  McLeod, C. E.
Whilden, C. M.  Turner, C. M.  Smith, T. E.  Smoke, G. W.

Corporals

Boseman, J. C.  Dargen, W. C.  Burley, J. E.  Bryce, G. T.
Burgess, R. H.  Jones, M. A.  Crook, M. D.  Cunningham, J. W.
Covington, J. B.  Klugh, G. F.  Evans, J. C.  Dick, G. W.
Godfrey, A. B.  Miller, E. E.  Hicks, J. R.  Hightower, R. E.
McPhail, J. W.  Mundy, J. T.  Link, A. C.  Manning, F. C.
Marchbanks, J. C.  Turner, W. B.  Smith, T. W.  Lipscomb, R. W.
Owens, S. G.  .................................  Talbert, S. C.  Tuten, W. A.
Rees, H. F.  .........................................................  White, R. B.
### REGIMENTAL ORGANIZATIONS

#### THIRD BATTALION

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#### FIRST LIEUTENANTS

- Roche, A. O.
- Davis, J. A.
- Jones, W. L.
- Greene, G. H.
- Epting, J. C.
- Steer, R. D.
- Bradley, T. L.
- Cudd, J. E.
- Haskell, A. C.
- Smith, J. R.

#### SECOND LIEUTENANTS

- Thomas, H. L.
- Hawkins, C. E.
- Gilmer, F. S.
- Trent, R. L.
- McCraw, L. G.
- Avent, J. K.
- Dobson, C. R.
- Page, W.
- Lee, S. A.
- Massey, L. B.
- Stephenson, J. A.
- Corbett, T. S.
- Grice, H. S.
- Gillespie, S. L.
- Hayden, E. C.
- Valentine, J. G.
- Baites, J. M.
- Etheridge, T. J.
- Jones, R. C.
- King, E. H.
- Rickborn, J. H.
- Adams, L. C.
- Chapman, W. E.
- DuPre, G. C.
- Long, E. M.
- Thomas, J. R.

#### FIRST SERGEANTS

- Garrison, R. H.
- Haskell, A. C.
- Berry, W. J.
- Avent, J. K.

#### SERGEANTS

- Dobson, C. R.
- Page, W.
- Lee, S. A.
- Massey, L. B.
- Stephenson, J. A.
- Corbett, T. S.
- Grice, H. S.
- Gillespie, S. L.
- Hayden, E. C.
- Valentine, J. G.
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- Jones, R. C.
- King, E. H.
- Rickborn, J. H.
- Adams, L. C.
- Chapman, W. E.
- DuPre, G. C.
- Long, E. M.
- Thomas, J. R.

#### CORPORALS

- Britt, C. E.
- Cuttino, B. H.
- Hudgens, W. W.
- Midkiff, R. B.
- Thompson, Z. V.
- Whilden, J. E.
- Wylie, A. P.
- Abbott, W. B.
- Blakeney, C. R.
- Carter, S. T.
- Dunlap, G. H.
- Fishburne, J. G.
- Lesesne, F. F.
- Philpot, C. P.
- Bickley, B. L.
- Carter, W. H.
- Harrell, J. C.
- Herring, W. H.
- Martin, S. P.
- Mealing, J. P.
- Stevenson, R. C.
- Stoppelbein, H. E.
- Campbell, T. A.
- Ellis, E. S.
- Mercer, C. W.
- Pressley, W. H.
- Ramsey, W. T.
- Schaefer, W. B.
- Turner, J. A.
- Welborn, M. B.