STATE COLLEGE RECORD

Vol. 24

APRIL, 1925

No. 12

SUMMER SCHOOL

JUNE 15--JULY 24, 1925

ANNOUNCEMENT OF COURSES



North Carolina State College of Agriculture and Engineering

STATE COLLEGE STATION RALEIGH, N. C.

PUBLISHED MONTHLY BY THE NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING

Entered as second-class matter, October 16, 1917, at the postoffice at College Station, Raleigh, N. C., under the Act of August 24, 1912.

OFFICERS OF ADMINISTRATION

| E. C. BROOKS, A.B., Litt.D., LL.D. | |
|------------------------------------|---|
| T. E. BROWNE, A.B. | Director of the Summer School |
| L. E. COOK, A.B., M.S. | Assistant Director of the Summer School |
| MRS. JANE S. MCKIMMON | Assistant Director of the Summer School |
| J. M. GRAY, B.S. | Assistant Director of the Summer School |
| J. H. HIGHSMITH, M.A. | Assistant Director of the Summer School |
| E. L. CLOYD, B.E. | Dean of Students |
| E. B. OWEN, B.S. | Registrar |
| A. F. BOWEN, C.P.A. | Treasurer |
| LOUIS H. HABBIS. | |
| MISS LILLIAN FENNER | Dietitian |
| MRS. MARION HAYWOOD MASON | Matron |
| A. C. CAMPBELL, M.D. | |
| JOSEPHINE MAINOR, R.N. | Hospital Matron |
| J. R. GULLEDGE. | Librarian |
| T. T. WELLONS | Superintendent of Buildings |

Address official communications to DIRECTOR OF THE SUMMER SCHOOL STATE COLLEGE STATION RALEGE, N. C.

BRING THIS COPY OF THE CATALOGUE WITH YOU TO THE SCHOOL

FACULTY

Industrial Education FRWARD WILLIAM ROSHART, R.S. M.A. Professor, Vocational Education, N. C. State College GARFIELD A. BOWDEN, M.A. Education Professor, University School, Cincinnati, Obio WILLIAM STALEY BRIDGES, B.E. Gas Engine Ignition Instructor in Mechanical Engineering, N. C. State College Industrial Education GEORGE W. COGGIN. A.B. State Supervisor, Trades and Industries **Vocational** Education JAMES KIRK COGGIN, B.S. Assistant Supervisor, Agricultural Education LEON EMORY COOK A B. M.S. **Vocational** Education Professor of Vocational Education, N. C. State College W. B. COBB, A.B., A.M. Agronomy Associate Professor of Soils, N. C. State College JOHN BEE COTNER, B.PD., M.S. Agronomy Associate Professor of Farm Crops, N. C. State College R S. CURTIS B.S.A. Animal Industry In Charge of Animal Industry Division MARTHA CREIGHTON Home Demonstration District Agent WILLIARD HOLDEN DARST, B.S. Agronomy Professor of Farm Crops, N. C. State College JOHN BEWLEY DERIEUX, B.S., M.S., PH.D. Physics Professor of Physics, N. C. State College HELEN ESTABBOOK Home Demonstration Clothing and Household Furnishing Specialist HILBERT ADAM FISHER, U. S. NAVAL ACADEMY Mathematics Assistant Professor of Mathematics, N. C. State College JOHN MILTON FOSTER, B.M.E. Mechanical Drawing Assistant Professor of Machine Design and Applied Mechanics, N. C. State College GARNETT WOLSEY FORSTER, B.S., M.S., PH.D. Agricultural Economics Professor of Agricultural Economics, N. C. State College FREDERICK MORGAN HAIG, B.S., M.S. Animal Husbandry Assistant Professor, Animal Husbandry and Dairying, N. C. State College THOMAS PERRIN HARRISON, B.S., PH.D. English Professor of English, N. C. State College J. S. HOWARD, B.S. **Vocational** Education Assistant Supervisor of Agricultural Education CHARLES MCGEE HECK, M.A. Physics Professor of Physics, N. C. State College J. T. HILTON Textile Associate Professor of Textile, N. C. State College J. HENRY HIGHSMITH, M.A. Education State Supervisor of High Schools LAWRENCE EARL HINKLE, M.A. Modern Languages Professor of Modern Languages, N. C. State College ADOLPH J. HONEYCUTT, B.S. Sociology Instructor in Sociology, N. C. State College EARL HOSTETLER, B.S. Animal Husbandry Specialist in Swine Investigational Work, N. C. State College WILLIAM EDWARD JORDAN, B.S., M.A. Chemistry Assistant Professor of Chemistry, N. C. State College

BENJAMIN FRANKLIN KAUPP, B.S., M.S., D.V.M. Poultry Science Professor of Poultry Science, N. C. State College L F KOONCE DVM Animal Husbandry Professor of Veterinary Science, N. C. State College L. H. MCKAY, B.S. Animal Husbandry Assistant Professor of Animal Husbandry, N. C. State College MRS. JANE S. MCKIMMON Home Demonstration State Home Demonstration Agent, N. C. State College WILLIAM LYNDON MAYER, B.S. Education Associate Professor of Vocational Education, N. C. State College Z. P. METCALF, SC.D. Zoology Professor of Zoology, N. C. State College JOHN F. MILLER, B.S., P.E. Physical Education Professor of Physical Education, N. C. State College HARRY LEWIS MOCK, A.B. Mathematics Assistant Professor of Mathematics, N. C. State College MRS. CORNELIA C. MORRIS Home Demonstration District Agent THOMAS NELSON Textile Professor of Textile Engineering, N. C. State College ALLEN G. OLIVER Poultry Extension Specialist in Peultry, N. C. State College W. C. PARKER, B.S., P.E. Physical Education Associate Professor of Physical Education, N. C. State College WILLIAM FRANKLIN PATE, B.S., M.S. Aaronomu Professor of Soils, N. C. State College JOSHUA PLUMMER PULSEURY R.S. Horticulture Professor of Horticulture, N. C. State College GEORGE WALTER PRICE. Mechanical Engineering Instructor in Forge, N. C. State College PERCY WALTER PRICE Music Assistant Professor of Music, N. C. State College ERNEST R. RANEY Farm Engineering Extension Specialist in Agricultural Engineering, N. C. State College STEWART ROBERTSON, B.A. Auricultural Journalism Assistant Professor of Journalism, N. C. State College ROBERT HENRY RUFFALE RS. Animal Husbandry Professor of Animal Husbandry, N. C. State College MRS, WILLIAM WELDON SHAY Swimming ROSS SHUMAKER, B.ARCH. Architecture Professor of Architecture, N. C. State College IVAN VAUGHAN SHUNK, A.B., M.A. Botany Assistant Professor of Botany, N. C. State College

 Muss. Estrille Suffri Paviline Suffri Paviline Suffri Annue Demonstration
 Home Demonstration

 Autor Suffri Annue Demonstration
 Home Demonstration

 Annue Demonstration
 Home Demonstration

 Annue Demonstration
 Tocational Education

 Roy Hillana Supervisor of Agricultural Education
 Supervisor of Agricultural Education

 Monte Demonstration
 Supervisor of Agricultural Education

 My. Thortree, R.S.
 Horticulture

Instructor in Horticulture, N. C. State College

 MAUDE WALLACE
 Home Demonstration

 Assistant State Home Demonstration Agent
 Farm Nap Associate Parlenary of Agricultural Engineering, N. C. State College

 PRED BARNET WHELELER, B.E., M.E. Instructor in Wood Shop, N. C. State College
 Wood Shop

 LOSS PRANKLIN WILLIAMS, A.B., Ph.D. Professor of Assilvieil Chemistry, N. C. State College
 Ochemistry

 ROHERT E. LEE YARES, A.M. Professor of Mathematics, N. C. State College
 Jathematics

SPECIAL LECTURERS

| DR. OTIS CALDWELL | Science Teaching |
|---|----------------------------|
| Professor of Education and Director Lincoln School, Teacher Columbia University, New York City | s' College, |
| DR. GEO. D. STRAYER Professor of Education, Teachers' College, Columbia University, | Education New York City |
| HON. A. T. ALLEN State Superintendent of Public Instruction of North Ca | Education |
| HON. FRANK PAGE Chairman of Highway Commission of North Carolin | Roads |
| DR. A. M. HARDING Professor of Mathematics, University of Arkansas | Astronomy |

GENERAL INFORMATION

The twelfth Summer Session of the North Carolina State College of Agriculture and Engineering will begin with registration on Monday, June 15, and close with final examinations on Friday, July 24, 1925. The purpose of the Summer School is to serve the farmers of the State, teachers of agriculture, teachers of industrial arts and of industrial education, principals and teachers of high schools, and especially teachers of science in high schools, leaders in agricultural extension and research work, and persons interested in executive and administrative positions in industry—a service State College is well equipped to render.

The Summer School during 1925 will, as in 1924, attempt to render the people of the State special service in those particular fields of endeavor for which its equipment and faculty render it exceptionally well qualified. In addition to courses especially designed for teachers and short courses for leaders in the State's varied industrial activities, regular college credit courses will be offered in many of the subjects tanght in the regular session.

HIGH SCHOOL PRINCIPALS AND SCIENCE TEACHERS

There will be offered for principals and teachers of higb schools both professional and subject-matter courses. Special courses in methods of teaching high-school science, together with courses in the various sciences, will occupy a large place in the Summer School. This is made necessary by the domand throughout the State for professionally trained teachers of science in the secondary schools.

Mr. John Henry Highsmith, State Supervisor of High Schools, will have charge of the general courses for high school principals and teachers. Professor Garfield A. Bowden, of the University School, Cincinnati, Ohio, will offer the same courses he gave last summer in the teaching of science and will offer advanced work for those who have had the introductory courses. An effort will be made to help the teachers in planning of laboratories for high school science and in the proper use of laboratory equipment.

AGRICULTURE

A six-weeks course in professional and technical subjects will be given for the teachers of agriculture in addition to the two weeks intensive instruction for teachers who are unable to attend the longer session. These courses are designed for both the teachers already in service and for prospective teachers of agriculture in the vocational schools. A two-weeks course for teachers of agriculture will begin July 6 and run till Saturday noon, July 18. This is for the teachers now in service. Persons taking this course for credit will be required to begin class work July 6. This work will be in charge of Mr. Roy H. Thomas, State Supervisor of Agricultural Education, assisted by the staff of the Department of Vocational Education and by Assistant Supervisors.

COURSE FOR FARM WOMEN

A one-week course in homo economics and agriculture is provided for farm women from June 15 to June 20. Instruction will be offered in food preparation, meal planning, clothing, house furnishings, and poultry.

BOYS' AND GIRLS' CLUB WORK

A special term from July 6 to July 11, inclusive, is for the leaders of the boys' and girls' clubs of the State. These courses are designed to meet the needs of certain boys and girls of demonstrated leadership who wish to come to the college for a week of intensive instruction in order that they may be better qualified to aid in organizing and directing the work in their counties.

In addition to instruction, recreation will be well cared for, and the boys and girls who come may look forward to both a very profitable and pleasant stay at the college.

COTTON CLASSING

The courses in Cotton Classing are arranged to instruct the producer in grading staple, to induce him, in consequence, to try to grow cotton of better staple, and to sid him in selling his product to better advantage. They are open also to buyers of cotton. The courses are arranged for young and middle-aged mee, and are not intended for boys, nor for men who lack carnestness of purpose. There are no entrance requirements for the Cotton Classing courses except that the applicant should have a good English education.

INDUSTRIAL ARTS

During the Summer School emphasis will be given to the preparation of teachers of industrial arts for the various communities of North Carolina. The rapid growth of vocational education in our State is creating a demand for supervisors and teachers who are competent to develop it in the right direction. Courses will be given in shop-practice, mechanical drawing, methods of teaching, subject-matter, and administration. Supervisors and teachers are needed for the work in the junior and senior high schools, part-time and continuation schools, and evening schools. The need is for those who are familiar with both general and vocational education and are capable of placing the proper emphasis on the courses to be outlined for a particular locality.

Industrial arts education depends largely upon the soundness of the philosophy of the type of training which underlies the introduction of industrial studies. For this reason those professionally minded teachers with vision will welcome courses giving them a better basis for their work in the elassroom.

Courses in Textiles designed for men who are employed in the manufacturing plants, as well as courses for teachers who are employed in the textile communities, will be given. These courses will be arranged on a unit basis in order to meet the needs of the various groups who may wish to come to the College for different periods. In addition to the technical courses in the Textile Department, if the demand warrants, instruction will be offered in industrial management, personnel administration, and methods of teaching textile subjects.

INDUSTRIAL ARTS FOR ELEMENTARY TEACHERS

The purpose of the courses in Industrial Arts for the Elementary School is to create interest in these problems and prepare teachers and supervisors who will become leaders in introducing this work in their school systems. Credit for these courses may be used either in raising or renewing certificates. The course will be open only to those who hold a Primary or Grammar Grade C certificate or one of higher grade.

Teachers desiring to raise or renew their certificates will take the first three courses in the list below and one course selected from the remainder of the list.

| Ed. s266. | The | Teaching | of | Industrial | Arts | in | the | Elementary | School. |
|-----------|-----|------------|-----|-------------|--------|-------|-----|------------|---------|
| | T | welve hour | s p | er week; ti | hree c | redit | ts, | | |

- Ed. s267. The Theory of Industrial Arts in the Elementary School. Six hours per week; three credits.
- Tex. sX. Courses for teachers. Four hours per week; two credits.
- Ed. s235. Vocational Guidance. Six hours per week; three credits.
- Ed. s210. Methods of Science Teaching. Six hours per week; three credits.
- Ed. s201. Educational Psychology. Six hours per week; three credits.
- Ed. s202. Educational Tests and Measurements. Six hours per week; three credits.

NOTE .- The above courses are described elsewhere in the catalogue.

PHYSICAL EDUCATION AND COACHING

The Summer School will offer opportunity for coaches and teachers of physical training to take specialized courses in the Department of Physical Education. The courses in athletic coachening and physical training are arranged especially for instructors already engaged in teaching during the regular school year and for others who wish to supplement the preparation they may have received in college. The courses take up the more important problems of coaching and are designed for the purpose of fitting men more completely to take charge of athleties and physical training in schools and colleges throughout the courty.

Leaders in education now recognize the fundamental need of athletics as an important part of any broad educational program. The demand for competent teachers, supervisors, and directors far exceeds the supply. This is especially true in case of men qualified both in coaching and in conducting classes in physical training. Our schools are seeking men who are college trained to take charge of their athletics; men who are versed in all phases of athletic coaching and administration. Approximately thirty states in the Union now have adopted legislation making physical education a prescribed part of the elementary and secondary school program.

RECREATION

There will be supervised recreation, consisting of tennis tournaments, baseball, volleyball, basket ball, and handball. Instruction in swimming will be provided for both men and women. The new swimming pool, lockers and showers, and other gymnasium facilities will be available to all students.

GRADUATE STUDIES

Practically all of the departments of instruction at the College that are offering undergraduate work during the Summer School will also offer graduate work. Persons who have completed their undergraduate work and desire to work toward an advanced degree or to do additional college work of a graduate character, may receive one-half term's credit by pursuing graduate work during the six-weeks Summer School. Special provision will be made to pursue in absentia graduate work started at the College during the Summer School. Credit will be given for this work done away from the College, provided such work is arranged and registered for. In special cases, a student may continue work at the College or in the field for the whole summer and receive a full quarter's credit.

COLLEGE CREDIT

Beginning with 1924-1925, the regular session of State College was divided into three terms; consequently "credit," as used throughout this bulletin, refers to term credit, or twelve weeks' work, unless otherwise designated. Therefore, in order for the college-credit courses to count for a full term's work, they will be given, if for five credits, ten periods a week; if for three credits, six periods a week. Since, however, no



HOLLADAY HALL

student will be allowed to take more than eighteen hours of work per week, this restriction will prevent a student's taking more than one tenperiod course.

The courses for college credit are open to graduates of standard high schools, and to others of equal qualifications. These courses give college students the opportunity to remove conditions, so that they may enter their classes in the fall in fall standing. They will also make it possible to secure advanced credit. The college-credit courses are also open to teachers who hold standard State certificates.

All professional courses offered will have value both for teachers' certificates and for college credit. The subject-matter courses may also be counted by teachers for academic credit towards securing or raising their certificates.

PROVISION FOR BOTH MEN AND WOMEN

All courses are open to both men and women interested in the subjects offered. Special accommodations in the dormitories are provided for the women and attention will be given to their comfort and welfare.

SPECIAL LECTURES

The Summer School has made arrangements for a number of lectures of special interest to all Summer School students. Dr. Otis Caldwell, of the Lincoln School, Columbia University, will return for another series of lectures this summer on the problems of teaching science. Other lectures will be given h Dyr. George D. Strayer, Professor of School Administration, Columbia University; Mr. A. T. Allen, State Superintendent of Public Instruction, North Carolina; and Mr. Frank Page, Chairman of the State Highway Commission.

ILLUSTRATED LECTURES ON ASTRONOMY

One of the most interesting and instructive entertainments on the Summer School program will be a series of illustrated lectures on "Gilimpses of Other Worlds" by Dr. A. M. Harding, of the University of Arkansas. During the past five years Dr. Harding has appeared before audiences in twenty-one states and has filled many return engagements. His illustrated addresses are simple, non-technical, and full of life and detail. His audiences are always enthusiastic in favorable comment on his program, and their interest is shown by the increasing number of people who daily attend his series of lectures. After listening to Dr. Harding one cannot help but have clear and lasting impressions of the vastness and splendor of the universe. Dr. Harding will be at State College for three days, June 30th and July 1st and 2d.

ENTERTAINMENTS AND SOCIAL FEATURES

Arrangements are being made for several high-grade entertainments during the session. A reception for students and faculty, followed by other social and recreational events such as week-end pienies and excursions, serve to foster a congenial spirit in the student body as well as to keep students physically and mentally fit for efficient study.

FEES AND EXPENSES FOR SIX WEEKS STUDENTS

All fees and other charges are payable in advance and all checks should be payable to N. C. State College.

The expenses of the entire six-weeks Summer School are as follows:

| Registration | \$ 2.00 |
|--|---------|
| Tuition | 10.00 |
| Room rent, each person (two or more in room) | 6.00 |
| Board | 30.00 |
| - | |

\$48.00

The \$30 payable for board includes meals from supper on June 14 through breakfast on July 24. If board is paid by the week, the weekly charge will be \$5.50, so that the total in this case will be \$33. If will, therefore, be economical to pay \$30 for the whole session in advance.

In a limited number of cases one may be able to room alone upon payment of \$10 room rent.

The registration fee is not returnable after June 6.

There will be no refund of room rent or tuition after the first seven days. In computing refunds for board after the expiration of seven days, charges will be made at the following rates: 40 cents a meal, \$1.20 a day, or \$5.50 a week.

Charge for individual meals will be collected at the Dining Hall, at the meal rate. Any one desiring to take advantage of the cheaper weekly rate must make payment at the Treasurer's office in advance.

The Summer School will be glad to entertain friends of those registered in the school who wish to visit them over-night or longer, at the rate of \$1.50 a day, or \$\$ a week. No guest, however, is expected to occupy any room unless previously assigned thereto by the Dean of Students. No reduction will be made for children.

There will be a key deposit of twenty-five cents, which amount will be refunded when the key is returned. In some of the classes there will be a small fee to cover cost of materials, which will be designated in the description of the course.

FEES AND EXPENSES FOR SHORT-TERM STUDENTS

There will be a fixed charge, payable upon registration, of \$1.50 per day for all persons registering for less than six weeks. This charge will cover board, lodging and tuition.

WHAT STUDENTS NEED FOR THEIR ROOMS

The College rooms are supplied with necessary furniture. Each student, however, should bring towels, sheets, one pillow and two cases, and two bedspreads for a single bed.

BOARD AND LODGING

Board may be had in the College at the moderate charges listed under Fees and Expenses, these charges being payable in advance.

Students will be assigned to rooms upon their arrival at the College. Those who prefer to have their rooms reserved can send in their registration fee of \$2 and be assigned to rooms in advance. Applicants who find that they will not be able to occupy the rooms assigned to them are required



A CAMPUS VIEW

to give notice to the Director five days in advance of the date fixed for occupancy or to forfeit to the Summer School the payment advanced for registration. Those who give notice in time that they cannot attend will have their payments returned to them.

In case it is desired to change the room assignment, permission to do so must first be obtained from the Dean of Students. In no case may a room be taken until it has been regularly assigned.

SELECTION OF COURSES

The advisers of the different groups will be available at the College during the mornings and afternoons of the opening days of the session. All students before registering will consult advisers appointed by the school to assist applicants in arranging their schedules. These are as follows: College-Credit Courses-E. B. Owen, Registrar.

Vocational-Education Courses-Leon E. Cook, Professor of Vocational Education, and E. W. Boshart, Professor of Vocational Education.

Cotton-Classing Courses-W. H. Darst, Professor of Farm Crops.

High School and Administration Courses-J. Henry Highsmith, State High School Supervisor.

REGISTRATION

All registrations will be conducted in Holladay Hall, beginning at 9 a. m. on June 15. It is desirable that persons who expect to attend the Summer School give notice to the Director in advance, but not necessary. Those who wish to have rooms reserved may pay the registration fee of two dollars and be assigned to rooms at any time after May 1. Those who do not give notice will be provided for when they arrive.

Students are expected to report in person on Monday, June 15, or on Tuesday, June 16, so that they may begin class work on the morning of Wednesday, June 17, at 8 o'clock.

HOURS OF WORK

It is important to notice that students are required to take twelve hours weekly in order to receive credit for one summer session, and that no one will be permitted to take more than eighten hours for credit. It has been the experience of summer schools that ambitious students try to take much more work than they can assimilate, with the result that they are bewildered rather than instructed.

In addition to the eighteen hours weekly regularly taken for credit, each student will be allowed a limited number of visiting hours, not to exceed four for any class.

The Summer School authorities reserve the right to cancel any course for which the registration is less than five.

All courses offered in Summer School are college-credit courses except where indicated in the description.

CREDITS

Summer School credit will not be given to anyone whose class attendance, scholarship, or deportment is unsatisfactory, or to anyone who is indebted to the school, or who takes more than eighteen hours a week of class work, unless permission to take the excess has been given in writing by the Director.

THE ATTRACTIONS OF RALEIGH

Being the capital of one of the original thirteen states, Raleigh is unusually rich in historical collections, fine public buildings, and interesting places and memorials. It is interesting, also, for its churches, its schools, its hotels, and its office buildings; and its growing commercial and industrial activity. Opportunities will be given the students to visit the places of interest. The various churches welcome all Summer School students to Sunday school and church services, and their pastors have taken a very friendly interest in the morning services at the College auditorium. Raleigh will be found in all respects a delightful place of residence.

THE SOCIAL CENTER

The Y. M. C. A. building will be the social center of the school. This building contains a reading room, an auditorium, several reception rooms, a limited number of sleeping rooms, a bowling alley, a gymnasium, and a swimming pool.

LIBRARY AND READING ROOM

The College Library, containing over ten thousand volumes, with about a hundred and fifty periodicals, will be at the disposal of the Summer School.



THE D. H. HILL LIBRARY

The Olivia Raney Library and the State Library will also be open to Summer School students for reference work.

FRANK THOMPSON GYMNASIUM

This \$225,000 building, just completed, is without doubt the finest and best equipped gymnasium in the South. The main floor is 130 by 110 feet, with an intercollegiate basketball court of maximum size and seating capacity for 2,500 spectators without using the gallery. Two maximum sized cross courts make it possible to run off class and tournament games. The auxiliary gymnasium or exercise room is 110 by 40 feet. Both of these rooms are equipped with full gymnasium apparatus and handball courts. The basement is fitted up with 1,000 private steel combination lockers, Team training rooms, equipped with private showers and lockers, a towel service room, an equipment room, and a wrestling and boxing room compose one half of the basement. The other half is given over to the Armory.



THE FRANK THOMPSON GYMNASIUM

The swimming pool is located in an annex amply lighted both by windows and sky lights, and finished with white tile. The pool is 75 by 30 feet, with room sufficient to accommodate several hundred spectators.

COURSES TO BE OFFERED IN THE SUMMER SCHOOL

AGRONOMY

Agron. s102. Cotton or Tobacco. Six hours a week; three credits. Mr. Cotner.

Lectures and recitations on history, production, adaptation, types and varieties, including cultivation, harvesting, grading, and marketing will be given. Laboratory consists of variety studies, the classing of cotton, and the grading of tobacco. Laboratory fee, \$2.



A CLASS IN COTTON CLASSING

Agron. s201. Cereal Crops. Prerequisite: General Field Crops. Six hours a week; three credits. Mr. Darst, Mr. Cotner.

Lectures and recitations in history, production, cultivation, improvement, harvesting, storage, and marketing. Laboratory consists of structural studies, seed judging, variety identification, and commercial grading. Special problems in cereal production. Laboratory fee, \$2.

Agron. s203. Advanced Seed Judging and Grading. Prerequisite: Cereals. Six hours a week; three credits. Mr. Darst, Mr. Cotner.

Lectures and practice in planning, arranging, and judging field crops exhibits. Study of the Federal grain and hay standards. A course planned to develop experts in the judging of field crop seeds and in the grading of grain and hays. A course designed for agricultural extension workers and vocational teachers. Laboratory fee, 82. Agron. sl. Cotton Classing. Twenty hours a week for six weeks; no college credit. Mr. Darst, Mr. Cotner.

The Summer School of Cotton Classing is designed to prepare men to enter the cotton business and to enable producers to become familiar with grades, so that they may handle their cotton more efficiently from the time it opens in the field until it is baled.

Inefficient handling at the present time is causing the State a loss of millions of dollars annually. The business side of cotton transactions as well as the practical grading and stabilize will be included in the course.

Experience will not be necessary for taking the course, as the class will work in groups according to previous training. Students may qualify as competent cotton classers at the expiration of this course.

The course will consist of lectures and daily practice in grading and stapling cotton samples according to the revised U. S. Cotton Standards, including the descriptive grades as well as the official.

The course will be given each day, with the exception of Saturday, for four hours a day.

The first period of each day will be devoted to lectures and discussions, and the remaining time will be used in the actual practice of grading and stapling of cotton. An expert from the United States Department of Agriculture will assist in this course.

COURSES OF TWO WEEKS

Agron. s2. Seed Judging and Crop Identification. One hour a day for two weeks. Mr. Darst.

A course consisting of lectures, discussions, and practice in the judging of field crop seeds according to the most recent and approved methods. Considerable attention will be given to the identification and adaptation of important crops and their varieties. An intensive course for vocational teachers of agriculture.

Agron. s3. Cotton. One hour a day for two weeks. Mr. Cotner.

A course consisting of lectures and discussions on history, production, harvesting improvement, types, varieties, and uses of cotton. Best varieties and methods of culture for boll weevil conditions will be stressed. Laboratory consists of variety studies and judging of desirable plants, lint, and seed.

Agron. s4. Tobacco. One hour a day for two weeks. Mr. Cotner.

A course consisting of the history, development, production, curing and grading of tobacco.

Agron. s5. Fertilizers. One hour a day for two weeks. Mr. Cobb.

This course deals with the characteristics of the important fertilizing materials and their use. Special attention is given to the figuring out of fertilizer formulas and the home mixing of fertilizers. The results of fertilizer experiments on the best farms are considered and formulas for the important crops on the different rools of the State are considered. Agron. s6. Farm Shop Work. Six hours a week; two weeks. Mr. Weaver.

This course is designed to meet the needs of men now engaged in teaching agriculture in high schools throughout the State. The majority of the time will be speet working with tools and equipment, but enough time for discussion of methods and practice of teaching Farm Shop Work will be used to develop the teaching phase.



REGISTER-OF-MERIT COWS

ANIMAL HUSBANDRY AND DAIRYING

A. H. s1. Stock Judging. Five hours a week; two weeks. Mr. Ruffner.

This course aims to train the student to become proficient in livestock judging. The first part of the work consists of a study of the breed characteristics of farm animals, and the proper types within each breed. The major portion of the work is done by the method of comparative judging, using rings of from three to five animals. Some time is devoted to the methods of conducting livestock contexts.

A. H. s2. Farm Animals in Health and Disease. Five hours a week; two weeks. Mr. Ruffner.

In this course the common diseases of domestic animals are discussed, and particular attention is given to first-aid treatment, preventive measures against the spread of contrajous and infectious diseases, methods of taking temperatures, the modes of administering the more commonly used medicines; the prevention of hog cholera, the importance of tuberculin testing, and the care of animals and premises for the prevention of disease. This is a course for county agents, teachers, and students preparing to teach Vocational Agriculture.

A. H. s102. Animal Nutrition. Five term credits. Mr. Ruffner.

A study of the principles of Animal Nutrition, including the physiology of the digestion of feeds, the uses of nutrients in the body, feeding standards as adapted to different classes of farm animals. A. H. s201. Swine Production. Three term credits. Mr. Hostetler, Mr. McKay.

A study of types, breed characteristics and adaptability of swine. Emphasis is given to breeding, housing, and marketing of swine. Practical work is given in the laboratory in feeding, management, and judging.

A. H. s202. Animal Breeding. Five term credits. Mr. Ruffner.

A subject in which detailed attention is given to the causes which have brought about the improvement in our domestic animals. As far as possible, a first-hand study is made of different successful breeding establishments and their problems, by the instructor and students.

A. H. s203. Advanced Stock Judging. Three term credits. Mr. Haig.

Consideration is given to animal conformation, quality, and condition, with reference to market and show-yard requirements; to the selection of horses and mules, beef cattle, dairy cattle, sheep, and awine for the feed lot, the market, and exhibition, and to judging at livestock shows. A textbook is used, supplemented by lectures, laboratory, and field work. The course is designed to give the student a more thorough knowledge and greater appreciation of good livestock.

A. H. s208. Stock Farm Management. Three term credits. Mr. Ruffner.

A subject devoted to the study of successful methods of operating farms devoted chiefly to livestock production. Special reference is made to the best systems as applied to North Carolina conditions.

A. H. s210. Advanced Nutrition. Five term credits. Mr. Ruffner.

A study of recent scientific publications on the chemistry and physiology of the nutrition of animals, and the chemical and physical changes and processes involved in the activities of animal life. Animals are used to demonstrate the effects of the various nutrients and rations.

A. H. s218. Diseases of Farm Animals. Three term credits. Mr. Koonce.

This course naturally follows the previous course, as it takes up those diseases of our domestic animals that are communicated from one to another, principally by bacteria. In the third term a discussion of external and internal parasites is carried on to acquaint the student with the best known means of combating them.

BOTANY

Botany s101. General Botany. Nature of the Higher (Crop) Plants. Two lectures; four recitations; eight hours laboratory; five credits. Equivalent to Freshman and Sophomore course given the first quarter of the regular college year. Fee, \$2. Mr. Shunk.

This course is offered to meet the needs of the following groups of students:

 Teachers of biology who desire to enhance their knowledge of the higher plants, especially the crop plants. (2) Agricultural workers who desire a thorough review of the fundamental structure and functions of the crop plants.

(3) College students who, having failed this course in past years, desire to change their record in regard to it.

In the course the fundamental structural and functional facts concerning the crop plant are taken up. Beginning with the flower, the work proceeds to the problem of fruits, seeds and germination of seeds. Then some fundamental biology is given relating to cells and tissues. Following this, the structural and functional data concerning roots, stems, buds, and leaves are presented. Numerous excellent microscope slides are used to present the minute structural aspects, while the functional aspects are given with the aid of a number of striking demonstration experiments. Fresh crop plant material is used throughout the course for illustrative purposes. The course closes with a thorough review and summary of the whole field studied.

Botany s203. Systematic Botany. Two lectures; sixteen hours of laboratory; five credits. Equivalent of Junior and Senior course given in third quarter of the regular college year. Fee, \$1. Prerequisite: Elementary Botany. Mr. Shunk.

This course is presented for all students who desire a more intimate outdoor acquaintance with plants, both cultivated and wild. Teachers of biology, agricultural students, and all others interested in natural history will find this course especially desirable.

The basis of the course consists of practice in identification of plants with the aid of the plant manual. Material collected on the field excursions is brought into the laboratory and studied with the aid of binocular microscopes. In the lectures the fundamental characters of the natural plant families are pointed out and the voluntary relationships of these families are discussed. On the frequent field excursions the class will visit the floristically rich areas about Raleigh. On these excursions a few lectures will be given, dealing with the relation of plants to their environment. By the time the course closes the student should personally be acquainted with the commoner trees, shrubs, will dlowers, and weeds of the State.

CHEMISTRY

The courses in chemistry as announced correspond with the courses given during the regular college year. Students electing these courses will receive college credit, and will also receive credit on the different teachers' certificates. The need of at least an elementary knowledge of chemistry is now generally recognized, not only in the school, but also in the home and in the industries.

The course is available for students desiring to receive advanced college credits, and for those desiring to remove deficiencies in the subject.

Chem. sl. General Chemistry. Seven hours a week; three and one-half credits. Mr. Jordan.

The fundamental principles and phenomena of chemical activity are fully discussed and demonstrated. The metals, non-metals, and their compounds are taken up separately and systematically. Industrial applications of the more important chemical processes are briefly described.

- Chem. s2. General Chemistry. Seven hours a week; three and one-half credits. (Continuation of Course 1.) Mr. Williams.
- Chem. s3. General Chemistry Laboratory. Six hours laboratory; one and one-half credits. Mr. Jordan.

Here, under the eye of the instructor, the student examines the properties of the substances studied in the classroom, and investigates the transformation of these into others possessing different properties. He learns to see these things as they are. Laboratory fee, \$8.

- Chem. s4. General Chemistry Laboratory. (Continuation of s3.) Six hours laboratory; one and one-half credits. Laboratory fee, \$3. Mr. Williams.
- Chem. s5. Qualitative Analysis. Four hours lecture, twelve hours laboratory; five credits. Prerequisite: General Chemistry. Mr. Jordan.

This course corresponds with the work in the third quarter of the Freshman year. Students have practice in the identification of the common ions, and the analysis of saits, minerals, etc. Laboratory fee, \$3.

Chem. s6. Organic Chemistry. Brief course. Seven hours lecture, six hours laboratory; five credits. Prerequisite: General Chemistry. Mr. Williams.

This course corresponds with that of the third quarter of the Freshman year. Class work will consist of a study of the more general organic compounds, the fundamental principles of the subject, and the relation of organic chemistry to plant and animal life. Laboratory work consists in preparation of compounds and study of reactions illustrating the theories studied in class. Laboratory fee, §3.

Chem. s7. Quantitative Analysis. Two hours lecture, twleve hours laboratory; four credits. Prerequisite: Qualitative Analysis. Mr. Williams.

This course corresponds with first quarter of Quantitative Analysis. Gravimetric and volumetric analysis of pure salts at first, followed by analysis of substances of agricultural and commercial importance. Laboratory fee, §3.

ECONOMICS

Econ. s102. General Economics. Six hours a week; three credits. Mr. Honeycutt.

This is a beginning subject in Economics. It treats of the business aspects and economic organization of society. It includes a study of the great fundamental economic laws which apply to all professions and occupations; a study of the production, distribution, and value of economic goods, and a study of the institutions, agencies, and ideas which dominate, operate, and control the manner, means, and methods of making a living. Econ. s101. Commercial and Business Geography. Six hours a week; three credits. Mr. Honeycutt.

World geography as influencing the commercial life of man, viewing the factors of production, distribution, and consumption from their world-wide aspects. This study includes a survey of such problems as the following: Our changing environment, the production of traw materials, basic manufacturing industries, expansion of industry and resources, the law of trade, the world's highways, the ocean and its carriers, recent world changes and the Panama Canal, trade and trade routes of the continents, the trade center--its work and development; balance of trade and its relation to industrial development; commercial policy of nations.

Econ. s201. General Accounting AI. Six hours a week; three credits. Mr.

Open to all students. This course deals with the fundamental and universal principles of accounting practice. It is designed to fill the needs of the student who expects to become an accountant; the manager, investor, or layman who wishes to understand, interpret, and profit fully by the work for the accountant, and the teacher who wishes to have more than a mere knowledge of bookkeeping and provides laboratory practice in their use as a part of the work. An analytical study is made of the underlying principles of accounting practice to enable the student to interpret and appreciate the facts behind the figures. The rest of the work is devoted to the construction of accounts, special forms, preparation of financial statements, the distinction between capital and revense, maintenance and depreciation, methods of determining valuations and the basis of cost accounting.

EDUCATION

The courses in the Department of Education have both certificate value and college-credit value. They are planned to meet the needs of high school principals and teachers, teachers of science in the high schools, teachers of agriculture, and teachers of industrial arts and industrial education.

Ed. s1. Problems in School Administration. Six periods; three credits. Mr. Highsmith.

Problems common to any school system will be considered, such as the powers and duties of the board of education; the powers and duties of the superintendent; problems pertaining to the teacher and the pupil; problems of finance, salaries and pensions; school building problems; library and textbook problems; problems of the course of study and program making; school, home, community problems.

An attempt will be made to bridge the gap between theory and practice in school administration.

Textbooks, lectures, readings, and reports.

Ed. s2. Problems of the High School Teacher. Six periods; three credits. Mr. Highsmith.

This course will cover the State requirement with reference to supervision for a high school teacher. Topics and problems discussed will include: The aims of secondary education; the high school teacher, and the high school uppl]; discipline; classroom technique; training in habits of study; the curriculum; student rating; salaries; professional duties and responsibilities; school morale, and extra curricular activities.

Textbooks, lectures, readings and reports.

Ed. s3. Problems in Secondary Education. Six periods; three credits. Mr. Highsmith.

The purpose of this course is to give as practical assistance as possible to those men and women who wish to become high school principals in North Carolina. Frequent reference will be made to conditions in the State. The following problems will be discussed:

Aims of secondary education; the curriculum (with special reference to the North Carolina course of study); standards for high schools; classification of pupils; control of pupils and discipline; regulation of attendance; guidance of pupils; classroom standards; examination; marking system; interpretation of intelligence secres; supervision of study; class schedule making; duties of the principal; supervision of instruction; selection of teachers; teaching load, salaries; professional ethics.

Textbooks, lectures, readings and reports.

Ed. s7. How to Study. Six periods; three credits. Mr. Cook.

A course for teachers in the methods of study and supervising study. Considers the factors of study, the chief difficulties, the general principles for improving study, techniques and devices in the various school subjects. Teachers will have the opportunity of making special studies and reports on study methods related to the subjects which they (sech.

It will be an advantage for teachers interested in this course to correspond with the instructor as soon as possible.

Ed. s214. Visual Aids. Six periods; three credits. Mr. Armstrong.

Instruction and practice in the use of blackboards, charts, graphs, mnps, slides, stereographs, motion pictures, models, and exhibits in public school teaching. Demonstration lessons; visual aids available. Designed for elementary and high school teachers and grade supervisors.

Ed. s304. Supervision of Visual Instruction. Six periods; three credits. Mr. Armstrong.

A study of the cost and value of visual aids; place and limits; relation to imagination, interest and effort; equipment needed, where and how to secure it; common errors to be corrected. This course is intended for principals and others having administrative duties. Ed. s104. Psychology. Ten hours a week; five credits. Mr. Mayer.

An introductory study to general paychology. It is the purpose of this subject to give the student a basis for the interpretation of human conduct in terms of psychological principles substantiated through modern experimental psychology. The subject treats such determining factors of human behavior as the following: The human receiving, connecting, and reacting nervous mechanisms; human behavior; habit and habit formation; the learning process; memory; thought: dreams; individual psychology.

Ed. s201. Educational Psychology. Six hours a week; three credits. Mr. Mayer.

This course will deal with psychological facts and theory and their application to educational practices. A study will be made of the human receiving, connecting, and reacting nervous mechanisms, the original equipment of man, reflexes, instincts, and capacities; emotional behavior; laws and nature of learning and of habit formation; economy in learning; transfer of training; work and fatigue; individual differences and intelligence.

Ed. s202. Educational Tests and Measurements. Six hours a week; three credits. Mr. Mayer.

This course will give the teacher an insight into the more common achievement, diagnostic, and mentality tests, and their use and interpretation from the standpoint of the teacher, supervisor, and administrator. Errors in teacher's marks, principles of testing, and methods of content examining will be discussed from the standpoint of making the teacher more efficient in examining and grading.

Ed. s4. Special Problems in Teaching Agriculture. Six hours a week; three credits. Mr. Cook.

This course is for graduates of the Department of Vocational Education. It will consist of special individual problems and preparation of plans for the next year's work, involving a survey of the school and community in which they are to work the coming year. From this information each student will prepare a program of agricultural education especially adapted to his school and community. It will include classroom arrangements and fixtures, library enujment, gathering specimens and illustrative materials, and the organization of courses of study.

Ed. s6. Methods of Teaching Farm Management in the High School. Six hours; two weeks. Mr. Coggin.

This course combines subject-matter and the method of teaching farm management in the high school. Surveys of local farms made by the teachers themselves will form the basis of the course. Such problems as the farm layout, analysis of the farm business, size, balance, cropping systems, labor distribution, etc., will be studied from the standpoint of the secondary school. Ed. s5. Methods of Teaching Agriculture. One period a day for two weeks; one credit. Messrs. Cook, Thomas, Coggin, Howard and Teachey.

A course for experienced teachers of agriculture. The class will be divided into sections according to the needs and interests of the members of the class. The special antis will include: Job analysis, community work, part-time and evening class instruction, use of the ninety-minute period, improvement in supervised practice, project planning, and supervised study.

Ed. s310. Problems in Agricultural Teaching. Six periods; three credits. Prerequisite: Eight credits in education. Mr. Cook.

Investigations, reports, and a critical evaluation of present practices with constructive remedies. The content of the course will vary according to the problems selected for study.

Ed. s210. Methods of Science Teaching. Six hours a week; three credits. Mr. Bowden.

A course for teachers of science in the secondary schools. It will include the aims and values of the various courses in science, organization and sequence of studies, methods of teaching adapted to the various sciences, and means of measuring results.

Ed. s211. Materials in Science Teaching. Six hours a week; three credits. Mr. Bowden.

A course in the materials needed for the teaching of general science, biology, physics, and chemistry in the junior and senior high schools. Such problems will be considered as arrangement of laboratories, equipment, how and where to secure supplies, use of home-made apparatus, collection and preservation of biological materials, laboratory technique, and adapting the content of courses to the various localities of the State.

Ed. s266. The Teaching of Industrial Arts in the Elementary School* Twelve hours a week; three credits. Mr. Boshart.

Treats of the practical handwork problems and the relation to the subjectmatter of the elementary grades. The meaning of industrial arts and the methods of making it a part of the regular work of the school will be discussed. Primarily for teachers and supervisors of the elementary school.

Ed. s267. The Teaching of Industrial Arts in the Elementary School.* Six hours a week; three credits. Mr. Boshart.

A study of the value and place of industrial arts in the elementary school. The correlation of industrial arts with other school subjects; the methods of teaching and supervision; and the study of industries with the view of selecting suitable projects for school use. For teachers in the elementary schools who have had teaching experience and who have not had special work in industrial arts.

^{*}See note on page 9.

Ed. s331. Teaching and Supervising Industrial Arts in the Secondary Schools. Six hours a week; three credits. Mr. Boshart,

Treats of problems of organization, and methods of teaching industrial arts in the junior and senior high schools; the vocational school; problems in class organization, equipment, courses of study; and the working of the more successful schools of this country.

Ed. s235. Vocational Guidance, Occupations, and Placement. Six hours a week; three credits. Mr. Boshart,

Treats of the problems of directing pupils in the study of occupations for the purpose of selecting satisfactory life work. It includes studies of the history of occupational guidance and personnel administration; principles and practices in guidance and employment; compulsory school laws; child labor legislation; and forms and records essential for school use.

Ed. s245. Vocational Education. Six hours a week; three credits. Mr. Coggin.

Treats of problems centering around the education of workers who have entered and who are about to enter industrial occupations. It will call attention to the place industry should occupy in the field of general and vocational education. Topics for discussion are as follows: History of the movement; courses in the elementary and secondary schools; continuation schools; evening schools; trade and factory schools; short unit courses; and the administration of the Smith-Hughes Act. Primarily for those who are teaching in this field and principals or superintendents who desire to become more familiar with the opportunities for the work under their direction.

Ed. s268. Industrial Education. Six periods a week; three credits. Mr. Coggin.

This course will be given for teachers working in industrial communities for the purpose of helping them to coordinate their school work with the community interests. A detailed discussion of the organization and administration of vocational classes with analysis and lesson planning will be taken up. Teachers taking this course along with the Summer School Textile Course SX should be able to conduct part-time or evening textile classes, for which there is such great demand.

Ed. s249. Shop and Brawing Room Equipment. Lectures and recitations five hours per week; three credits. Members of staff.

Materials, supplies, cost and proper sizes will be studied. Inspection trips will be made. Catalogues will be studied. This course is for those who contemplate introducing industrial art courses in their schools and want to know the best practice in these matters.

ENGLISH

Eng, s1. Practical Composition. Freshman credit; six periods; three credits. Mr. Harrison.

The foundations of style in the choice of words, the building of sentences and paragraphs, and the structure of the complete composition in its most practical types, as letters, short narrative and descriptive sketches, form the subject-matter of this work. Emphasis is placed on the mechanics of style. Attention is given to oral discourse and to conversational English. A textbook of composition and a book of illustrative selections are used.

Eng. s2. Advanced Practical Composition. Freshman credit; six periods; three credits. Mr. Harrison.

The course is given concurrently with that above, with which it is related. The emphasis is placed upon clear, systematic thought as essential to the development of an effective style. The types of writing on which practice is based are mainly expository and argumentative. Textbooks of principles and models are used.

Eng. s3. Technical Writing. Elective credit; six periods; three credits. Mr. Harrison.

The writing of engineering, agricultural, and commercial reports, bulletins, and articles require special adaptation of the principles of composition. These principles, with practice in their application, constitute the content of this course. The rules of logic applicable to these types of writing are studied.

Eng. s4. English for High Schools. Elective credit; six periods; three credits. Mr. Harrison.

Intended primarily for teachers of the subject, the work consists of a thorough review of the fundamentals of grammar and composition, and of their use in speaking, in writing, and in the interpretation of literature. The need and the means for making English a subject which will appeal to high school students by making it practical as well as cultural and inspirational, are presented. Textbooks in composition and in literature. References.

Eng. s5. Contemporary Literature. Elective credit; six periods; three credits. Mr. Harrison.

A rapid review of the background of English and American literature in periods, types, and arthors is followed by a study of present-day authors, writings, and tendencies. Prose fiction, particularly in the short story, is the form mainly studied in class; but history and biography, the essay, poetry, and drama are read as collateral and made the subjects of class discussions. This is a practical course for beginning students in extemporaneous speaking. The fundamentals aimed at are thought conception, power of analysis, orderly arrangement of ideas, self-control before an audience, and an apt and forceful ex tempore presentation.

Eng. s7. Industrial Journalism. Three hours a week; one and one-half credits. Mr. Robertson, Mr. Thomas.

A course in journalism is offered to meet the needs of courty agents, home demonstration agents, research men and women, teachers of agricultural and industrial subjects, farmers, and others who may have occasion to prepare material for campus publications or for the press on agricultural and industrial subjects. Journalism does not displace fundamental work in English, but supplements it by giving the technique of journalistic writing.

Eng. s8. Agricultural Journalism. One hour a day for two weeks; one credit. Mr. Thomas.

This course will be an abbreviation of English s7, but specially adapted to the needs of teachers of vocational agriculture.

INDUSTRIAL ARTS AND ENGINEERING

I. A. \$248. Metal Work. Fifteen hours a week; three credits. Mr. Wheeler. Instruction will be given in elementary phases of metal work, including filing, chiping, drilling, beending and forming, and problems on the drill press, lathe and shaper. Intended for teachers of general shops where metal work will be a nart of the course offered.

I. A. s247. Woodworking. Fifteen hours a week; three credits. Mr. Wheeler.

Instruction will be given in bench-work; the use of wood-working machines and the construction and finishing of projects suitable for woodworking classes in the junior and senior high schools. Special attention will be given to the problems of selecting suitable equipment and its installation.

I. A. s246. Mechanical Drawing for Industrial Arts and Vocational Teachers. Fifteen hours a week; four credits. Mr. Foster.

Drawing room practice twelve hours per week and recitation three hours per week. Lettering, instrument practice, orthographic projection, drawing from objects, and intersections and developments will be studied. Working drawings of projects that may be used in shop work will be made.

A. M. E. s102. Engineering Drawing. Drawing room practice fifteen hours a week; four credits. Mr. Foster.

Lettering, instrument practice, orthographic projection, sections, and intersections and developments will be studied. This course covers what is covered during the first two terms of the freshman year in engineering drawing, and credit may be obtained for same. B. M. E. s102. Engineering Drawing. Drawing room practice fifteen hours a week; four credits. Mr. Foster.

Sections, intersections and developments, revolutions, isometric and cabinet projection, working drawings, tracing and blue-printing will be studied.



A CLASS IN THE WOODSHOP

This course covers what is covered during the second and third terms of the freshman year in engineering drawing and credit may be obtained for same.

C. M. E. s102. Engineering Drawing. Drawing room practice eight hours a week; two credits. Mr. Foster.

Lettering, instrument practice, and orthographic projection will be studied. This course covers what is covered during the first term of the freshman year in engineering drawing, and credit may be obtained for same.

D. M. E. s102. Engineering Drawing. Drawing room practice eight hours a week; two credits. Mr. Foster.

Sections, intersections and developments, and revolutions will be studied. This course covers what is covered during the second term of the freshman year in engineering drawing, and credit may be obtained for same.

E. M. E. s102. Engineering Drawing. Drawing room practice eight hours a week; two credits. Mr. Foster.

Isometric and cabinet projection, working drawings, tracing and blueprinting will be studied. This course covers what is covered during the third term of the freshman year in engineering drawing, and credit may be obtained for same. M. E. s2. Sheet Metal Drawing. Lectures and drawing room practice ten hours a week; two credits. Mr. Foster.

Orthographic projection, intersections, developments, and triangulation will be studied. Paper models will be made.

M. E. s103. Descriptive Geometry. Lectures and drawing room practice eight hours a week; two credits. Mr. Foster.

Treats of the representation of geometrical magnitudes by means of points, lines, planes and solids, and the solution of problems relating to them. This course covers what is covered during the second and third terms of the freshman year in descriptive geometry, and credit may be obtained for same.

M. E. s107. Mechanical Drawing. Drawing room practice twelve hours a week; three credits. Mr. Foster.

Machine fastenings, pipe fittings, elementary cams, technical sketching, working drawings, tracing and blue-printing will be studied. This course covers what is covered during the sophomore year in mechanical engineering and mechanical drawing, and credit may be obtained for same.

M. E. s00. Free Hand Drawing. Lectures two hours a week and practice eight hours a week. No college credit. Mr. Shumaker.

Materials, technical dimensions, kinds of sketches, and the making of free hand sketches will be studied. This course is for those who have had no instruction in free hand drawing.

M. E. s3. Automobile Ignition, Starting and Lighting Systems. Five hours lecture and recitations. Twenty hours laboratory practice; five credits. Mr. Bridges.

Description, elementary electrical principles will be studied, giving special attention to the following: Electrical circuits; induction principles of motors and generators; fundamental ignition principles; sources of current, batteries, and modern types of magnetos; electrical starting and lighting systems.

M. E. st. Forge Shop Practice. Eight hours a week; one credit. Mr. Price. Instruction in the use of the forge and the different tools used in forge work. Lectures and demonstrations and practice on the forging of iron and steel.

M. E. s5. Automobile Mechanisms. Twelve hours a week; one and one-half credits. Mr. Bridges.

This course is offered for those students who wish to learn about the operation, care, finding of trouble and methods of remedy.

Tex. s1. Yarn Manufacture. Credits assigned according to time given to study. Mr. Hilton.

This subject will be divided into picking, carding, and spinning. It has been designed to meet the needs of young men working in cotton mills. The course will consist of lectures and practical work on machines in order that a man may specialize on any one or all the subjects and speed his whole



CARD ROOM, SHOWING FLY FRAMES

time in the Textile School. Lectures will be given at specified hours, and the remaining time will be spent with practical demonstration.

Tex. s2. Loom Fixing, Designing, Fabric Analysis, and Calculations. Mr. Nelson.

The subjects taught will be plain, drop box and fancy loom fixing. Elementary designing will be given as well as designing for special fabrics, such as lenos. Starting up warps and fixing looms for fine and fancy fabrics will be demonstrated in connection with the operation of the looms. Lectures covering important factors will be given and the course will be made as practical as possible. Any or all subjects may be studied. A mill man destring to spend his whole time in the Textile School will be permitted to do so. Tex. sX. Course for Teachers. Four or eight hours a week; two or four credits.

This course is designed to give teachers in cotton manufacturing communities a fundamental knowledge of the textile industry, and will be accomplished by lectures, demonstrations, and practical applications. In addition to a general survey of the textile industry, the various processes through which cotton passes in its transition from the raw material to the finished product will be studied. In this way the teacher will be able to understand more fully the problems of those who are working in the mills and will be a real help to the community. As far as possible this course will be arranged so that teachers can obtain a general knowledge of the industry which will enable them to apply their teaching to mill problems. Excursions through textile plants for information and acquaintance will be made.



HORTICULTURE AND VEGETABLE FORCING

HORTICULTURE

Hort. sl. Fruit Growing. Two-weeks course; one credit. Mr. Pillsbury.

Kinds and varieties of fruits, orchard plans, establishment and management problems, including pruning, spraying, and grading and packing fruit.

Hort. s2. Landscape Gardening. Two-weeks course; one credit. Mr. Pillsbury.

A course in the study of native plant materials, the principles of landscape art, and problems in designing for home grounds. Hort. s3. Orchard Pest Control. Two-weeks course; one credit. Mr. Pillsbury.

A practical course for the orchardist in determining what to use in controlling orchard pests, how to mix the various sprays in quantity, and when and how to apply the remedies.

Hort. s4. Home Vegetable Gardening. Two-weeks course; one credit. Mr. Trotter.

Home garden crops planning, planting, transplanting, cultivation, pest control, successions and rotations, costs and problems.

MATHEMATICS

Math. s101. Algebra. Ten hours a week; five credits. Mr. Mock.

This course includes the progressions, binomial theorem, undetermined coefficients, logarithms, compound interest and annuities, permutations, combinations, theory of equations, and solution of higher equations.

- Math. s102. Solid Geometry. Ten hours a week; five credits. Mr. Fisher. Three books of Solid Geometry, including numerous original exercises.
- Math. s103. Plane Trigonometry. Ten hours a week; five credits. Mr. Fisher.

Definitions of the trigonometric functions, derivation of formulae, and the solutions of all types of plane triangles.

Math. s104. Analytical Geometry. Ten hours a week; five credits. Mr. Mock.

Loci of equations, the straight line, circle, parabola, ellipse, hyperbole, and the general equation of the second degree.

Math. s201. Differential Calculus. Ten hours a week; five credits. Mr. Yates.

An elementary course on the fundamental principles of Calculus, including the development of the formulae for differentiation and their application to problems in rates, maxima and minima, expansion of functions, and curve tracing.

Math. s202. Integral Calculus. Ten hours a week; five credits. Mr. Yates.

Development of formulae for integration and their application to definite integrals, areas under curves, lengths of curves, volumes of solids, centers of gravity, centers of pressure, and moments of inertia.

MODERN LANGUAGES

Mod. L. s101. French I. Beginners French. Six hours a week; three credits. Mr. Hinkle and assistant.

Reading and oral practice with elements of grammar. This course is intended for students who have had no previous training in French. Practice in the pronunciation and use of French is given by means of reading and dictation, and as early as practicable, the recitations are conducted at least partially in French. Text: Omsted's First Course in French.

Mod. L. s120. Spanish I. Beginners Spanish. Six hours a week; three credits. Mr. Hinkle and assistant.

Reading and oral practice with elements of grammar. This course is intended for students who have had no previous training in Spanish. Practice in pronuciation is given by means of reading and dictation, and as early as practicable the recitations are conducted at least partially in Spanish. Text: Olmsteds First Course in Spanish.

Mod. L. s110. German I. Beginners German. Six hours a week; three credits. Mr. Hinkle and assistant.

Reading and oral practice with elements of grammar. This course is intended for students who have had no previous training in German. Practice in the pronunciation and use of German is given by means of reading and dictation, and as early as practicable the recitations are conducted at least partially in German. Text: Bacon's German Grammar.

Mod. L. s. 102. French II. Intermediate French. Six hours a week; three credits. Mr. Hinkle and assistant.

In this course rapid reading and sight translation are stressed. Selections from Hugo, Dumas, De Maupassant and Malot are studied by means of translations, parallel readings and reports. A general survey of modern Prench literature is made. Open to students who have had two years of high school French or one year of college French. Texts: Lavisse's Histoire de France; Manley's Eicht French Storjes.

Mod. L. s121. Spanish II. Intermediate Spanish. Six hours a week; three credits. Mr. Hinkle and assistant.

This course is intended to develop ability for rapid reading and sight translation. A general survey of Spanish virilization and literature is made by means of lectures, parallel readings, and reports. Selections from modern Spanish authors are studied. Open to students who have had two years high school Spanish or one year of college Spanish. Texts: Romera-Navarro's Historia de Espana. Others to be selected. Mod. L. s111. German II. Introductory Scientific German. Six hours a week; three credits. Mr. Hinkle and assistant.

This is a reading translation course in elementary scientific German II: erature. A great deal of attention is given to the study and analysis of German scientific constructions and a basis is laid for the later development of a scientific vocabulary. Open to students who have had two years high school German or one year of college German. Text: Wallentin's Grundzuge der Naturehene.

Mod. L. s330. Modern Languages I. Foreign Manners and Customs. Six hours a week; three credits. Mr. Hinkle and assistant.

This course is a study of the manners and customs, the habits and characteristics, and mental attitudes peculiar to the French, German and Spanish speaking peoples in relation to their linguistic and literary development. An attempt is made to develop a sympathetic attitude towards what may seem strange to us by showing the historical background of such things and their significance in literature. Attention is also given to these seeming peculiarities in connection with our attitude towards foreign people and foreign relations. The work is conducted by means of lectures, recitations and reports. Reference texts: Dawson's Evolution of Modern Germany; Gerard's French Civilization; Trend's Picture of Modern Span.

Note.—Other courses in Modern Languages will be given upon application tion of five or more students.

MUSIC

Mus. s1. Musical Theory and History. One hour each day; three credits. Mr. Price.

This course includes harmony, counter-point, instrumentation, accoustics, musical form, and history of music. This course is strongly recommended for members of orchestras and bands.

Mus. s2. Organizing and Conducting Music Clubs. One hour each day; three credits. Mr. Price.

The course is designed for teachers interested in organizing musical clubs. Takes up the fundamental organization and the proper methods used in conducting music clubs.

PHYSICS

Physics s1. Elementary College Physics I. Six hours recitation, six hours laboratory; four and one-half credits. Mr. Heck.

A general course covering the subject of mechanics and heat. The subjects chosen and method of presentation aims at giving a broad basis for understanding and appreciating physical phenomena. It is fully demonstrated and non-mathematical, having the emphasis on practical application and the place of physics in the development of the modern scientific world. Physics s2. Elementary College Physics II. Six hours recitation, six hours laboratory; four and one-half credits. Mr. Heck.

A continuation of the above course, taking up the subjects of sound, electricity and magnetism, and light. The latest developments along the lines of radio, X-rays and radium emanations will be emphasized.

Physics s3. Intermediate College Physics I. Seven hours recitation, four hours laboratory; six credits. Mr. Derieux.

A more advanced course in general physics requiring one year of college mathematics as a prerequisite. Heat and mechanics are covered by demoustrated lectures and assignments in a standard college text. The course corresponds to one term of the work given to Sophomores in engineering and receives the same credit.

Physics s4. Intermediate College Physics II. Seven hours recitation, four hours laboratory; six credits. Mr. Derieux.

A continuation of No. s3, covering the subjects of electricity and magnetism and giving one term of college credit as required of Sophomore engineers.

PHYSICAL EDUCATION

Phy. Ed. s1. Football and Baseball. Five hours a week; three credits. Mr. Miller.

This course will deal with both the theory and practice of the sports. Fifteen lectures will be given in each sport, covering the equipment, conditioning, rules, position play, systems of offense and defense, formations and team work, strategy and generalship.

Note.-Two hours practice a week will be given in this course after four o'clock.

Phy. Ed. s2. Basketball and Track. Five hours a week; three credits. Mr. Parker.

This course will make a thorough study of the rules, equipment, conditioning systems of offense and defense, formations from center and out of bounds plays in basketball. Each individual event in track and field will be taken up and the best form in each event studied. Organization of practice and of running off of meets will be discussed.

Note.-Two hours practice a week will be given in this course after four o'clock.

Phy. Ed. s3. Gymnastic Training. Three hours a week; two credits. Mr. Parker.

This course will cover the systems of physical training, conduct of classes,

graded exercises in both light and heavy apparatus, drills, nomenclature, and organization. Stress will be laid on this course from a teaching viewpoint as well as to be able to set the simple exercises for the class.



THE SWIMMING POOL

Phy. Ed. s4. Group Games and Mass Athletics. Three hours a week; one credit. Mr. Miller.

This course will include the rules, playing, and teaching of all games suitable to the playground and gymnasiam. Stress will be laid on members of the class getting practice in putting on of these games.

Note-Recreation in the form of tournaments in tennis, play-ground baseball, basketball, volley ball, and swimming will be organized for the Summer school student body. Active participation is invited of all summer students.

POULTRY SCIENCE

For Agricultural High School Teachers

Poul. s1. Advanced Poultry Production. Six hours a week for two weeks; one credit, Mr. Kaupp.

Four one-hour recitations and two two-hour laboratory periods a week. This will be taught from the job analysis standpoint and is calculated to strengthen the background for agricultural high school teachers.

The newer thoughts in feeding, hatching, rearing, growing, fattening, poultry house construction, selection, mating and production at profitable seasons and the care of the poultry products from the dush season to the season of scarcity are some of the things that will be taught from the standpoint of the job objective. Other topics to be considered are: Size of flock to establish; organization for cooperative production, selling, and buying; starting the flock by buying and incubating eggs, by buying baby chicks or by buying mature fowls; selecting stock from the home flocks; feeding the young chicks; combating insect pests and poultry diseases; housing the flock; feeding the flock; marketing poultry and eggs, and keeping records. This will include such laboratory exercises as caponizing, grading and packing eggs, dressing, grading, acoring, and packing dressed poultry, shipping live poultry, trapnesting flocks, keeping the records, and judging for both standard and utility.

Poul. s2. Poultry Diseases. Six hours a week for two weeks; one credit. Mr. Kaupp.

Four one-hour recitations and two two-hour periods a week. Especially designed for agricultural high school teachers and will include a discussion of conditions influencing the health of the fowls; a study of disease conditions with illustrations, preserved specimens from the poultry pathology muscum, and by cases in the poultry hospital, as well as autopsies from the disease research laboratory of noncontagious and contagious diseases of poultry.

A study will be made of how to recognize and treat diseases, the preparation of vaccine, and how to vaccinate against fowl cholera and fowl typhoid. How to cope with outbreaks of contagious diseases, and the aid which the poultry disease research laboratory can give the poultry keepers of North Carolina, will be considered.



For College Credit

Poul. s101. Introductory Course in Poultry Production. Six hours a week for six weeks; three credits. Mr. Kaupp.

Four one-hour recitations, two laboratory periods of two hours each. This course is an introduction to poultry for the purpose of interesting the



A SECTION OF THE POULTRY HOSPITAL

student in farm poultry. Special emphasis will be placed on the scope of the poultry industry and its possibilities; first, from the farm department standpoint, and second, as a separate business. It will include general problems, as sanitation, location of poultry houses, principles of poultry house construction, and general problems of small flock production.

Poul. s204. Poultry Diseases. Six hours a week for six weeks; three credits. Mr. Kaupp.

Four one-hour recitations and two two-hour laboratory periods a week. Medical parasitology, including poultry plant problems and control. A systematic study of noncontagious and contagious diseases and practical means of control. Serotherapy, and vaccination and agglutination tests as applied in poultry disease control work. Autopsies and means of recognition of disease and laboratory technique on the detection of the presence of contagious diseases.

Drawings, museum specimens, cases from the poultry hospital, and autopsies from the disease research laboratory will be used in the laboratory exercises.

Poul. s207. Special Poultry Marketing. Six hours a week for six weeks; three credits. Mr. Kaupp.

Four one-hour recitations and two two-hour laboratory periods. This is a detailed study from the production standpoint of grading, packing, handling, storing, preserving, pickling, refrigerating, storing, and shipping of eggs. A study and a graphing of the storage holdings of dried, frozen, and shell eggs each month of the year and the poultry production problems associated with it. Similar studies are made with live and dressed poultry and the fattening, shrinkage, and storage problems as well as the shrinkage and other problems in marketing live poultry.

SOCIOLOGY

Soc. 51. General Sociology. Ten hours a week; five credits. Mr. Honeycutt, This subject is an introduction to the scientific study of social life. It deals with he origin, development, structure, and function of all types of social organization. A number of practical social problems, such as poverty, erime, race problems, immigration, divorce, etc., are studied. The last half of the course is devoted to a study of social psychology, social institutions, and other forms of human association; social ideas, social processes, social controls, and social progress.

Soc. s2. Rural Sociology. Six hours a week; three credits. Mr. Honeycutt.

This is an introductory study in Rural Sociology. It deals with the rise and nature of the so-called rural social problem and the general social conditions which maintain and result from the occupation of farming. Such specific problems as rural isolation and communication, rural health, rural recreation, the rural school, the rural church, and the rural home are taken up and nankyzed. In so far as possible, a first-hand study is made of different rural communities and their problems by the instructor and students.

ZOOLOGY

Zool. 51. Elementary Zoology. Six hours a week; three credits. Mr. Metcalf, An elementary study of animals, with special reference to the vertebrates and the more important economic groups, is given by textbook, laboratory, and field work, with supplementary lectures. This course is designed to give the students the fundamental principles of animal life. The animal body is studied in its various types, and the methods of growth, waste and repair, methods of reproduction and the economic relations of typical animals are studied. Special emphasis is laid on the groups of animals that furnish man with food or that are beneficial or detrimental to him in any way. The source of animal products of importance to man is determined, and the distribution over the earth of the animals yielding these products is discussed.



MICROSCOPIC WORK IN THE INSECTORY

Zool. s2. Economic Entomology. Six hours a week; three credits. Mr. Metcalf.

An elementary study of the economic importance of insets in their relation to agriculture, the health of man and domestic animals. A detailed study is made of the morphology of typical insets and representative pests from all groups are studied from the standpoint of recognition of the injury and of life histories in relation to control.

COURSES FOR BOYS' CLUB LEADERS

July 6-10

This courre is arranged so that club members may receive training that will enable them to assist county farm agents in carrying out the 4-H Club work in the county.

Regular work will begin Tuesday morning, July 7, and will run through Friday, July 10. All lectures and laboratory work will be given in the mornings. The afternoons and evenings will be given over to recreation and social activities.

Competent instructors will have supervision of the recreational features, such as swimming, calisthenics, and games.

Ample time will be given for visits to all points of interest in Raleigh, such as the Hall of History, State buildings, and institutions.

NECESSARY EQUIPMENT

Each boy should bring a suit of overalls, bathing suit, bed linen, towels, toilet articles, also all kinds of athletic equipment, such as baseballs, bats and gloves.

COURSES

B. C. s1. Production and Marketing Poultry and Poultry Products. Mr. Kaupp; Mr. Oliver.

This course will consist of a study of the methods of producing and marketing poultry and of the grades and methods used in marketing eggs. Special emphasis will be placed upon grading, candling and packing eggs for the market and the use of parcel post and egg routes. This course is designed to fit club members for assisting in the movement to improve the quality of poultry and poultry products and the methods used in getting these products to the consumer.

B. C. s2. Livestock Judging. Mr. Ruffner; Mr. Curtis.

In this course a brief study will be made of the breed types and of the points indicating quality and value in animals. Lectures and demonstrations will be given, followed by a practice period in which the students will place and write their reasons on as many classes of livestock as the time will permit. This course is designed to interest the student in the study of animal types and to prepare him to take part in livestock judging and demonstrations held in connection with the local club, community, county and State fairs, and also to prepare him to recognize merit in individual animals.

B. C. s3. Farm Carpentry. Mr. Raney.

ŝ

The course in farm carpentry will be a practical laboratory course. For the poultry club members this will consist of the construction of a colony house, a self-feeder and perhaps other useful home-made equipment to use in connection with caring for the flock. For the pig club members it will consist of the construction of a hog house and self-feeders.

B. C. s4. Tractor and Farm Mechanics. Mr. Weaver,

This course will consist of the practical study of the care, operation and handling of gas tractors, with some work in pipe fitting and general gas engines.



CLUB BOYS STUDYING TRACTORS

B. C. s5. Crops. Mr. Darst; Mr. Pate.

This course will consist of a brief study of soils and their relation to crop production, crop fertilization, and laboratory studies of crop varieties. This course is given with the idea of assisting the club members in determining merit in seeds and to acquaint them with methods used in judging and selecting seeds in crop improvement.

From the above courses the club members will be expected to elect two subjects.

Note.-Inquiries concerning courses for Club Boys should be addressed to Mr. J. M. Gray, State College Station, Raleigh, N. C., or to your county agent.

COURSES IN HOME DEMONSTRATION WORK

The directors and instructors in Home Demonstration courses are: Mrs. Jane S. McKimmon, State Home Demonstration Agent; Miss Maudo E. Wallace, Assistant State Home Demonstration Agent; Mrs. Estelle T. Smith, District Agent; Mrs. Cornelia C. Morris, District Agent; Miss Martha Creighton, District Agent; Miss Pauline Smith, District Agent; Miss Helen Estabrook, Clothing and Household Furnishing Specialist, supplemented by instructors from the staff of county home demonstration agents.



I. COURSE FOR FARM WOMEN

June 15-20

A one-week course in home economics and agriculture is provided for home demonstration club women and for other farm women who desire to get the instruction.

No woman is permitted to take more than two subjects.

This course offers the following:

F. W. s1. Food Preparation and Meal Planning. Ten hours.

A study of the selection and preparation of food, and the planning of well balanced meals for the family.

F. W. s2. Clothing. Fifteen hours.

This course will deal with the selection of materials and patterns, cutting and basting, fitting and finishing, trimming and dress criticism.

F. W. s3. Wise Buying of Clothing. Ten hours.

This course will deal with the selection of ready-made garments, both outer and under; with attention given to dry cleaning and to the clothing budget.



MAKING THEIR OWN DRESSES

F. W. s4. Household Furnishings. Ten hours.

This course will deal with backgrounds (walls and floors); balanced arrangement of furniture; picture hanging and draperies; and the development of a color scheme for the living room.

F. W. s5. Poultry. Seven and one-half hours.

A study in poultry feeding; the control and prevention of parasites; and in judging poultry for utility purposes.

II. COURSE FOR CLUB GIRL LEADERS

July 6-11

This course is for the purpose of training club leaders to assist home demonstration agents in carrying out plans of project instruction.

C. G. sl. Clothing. Eight hours.

(a) Study in the technique of sewing, including the use of equipment, stitches, seams, construction and finishing.

(b) Costume appreciation, including appropriateness, line and design, color, accessories, and planning the girl's wardrobe.

C. G. s2. Foods. Eight hours.

This course will include table service and etiquette; the need for planning of meals; a demonstration breakfast, dinner, and supper.

Meal planning is based on the following food rules:

1. Three-fourths to one quart of milk each day.

2. One egg each day.

3. At least two servings of vegetables each day (other than potatoes or dried beans).

4. At least two servings of fruit each day (one raw).

5. Tomatoes (fresh or canned) or oranges twice a week.

6. One serving of meat each day (size of serving in proportion to age of child).

 Cereal foods to satisfy the hunger after above requirements have been met.

C. G. s3. Room Improvement. Eight hours.

This course will deal with the window treatment; furniture arrangement; color for home-made rugs; and the development of a color scheme for a bedroom.

C. G. s4. Poultry. Eight hours.

A study in poultry feeding, the control and prevention of parasites, and in judging poultry for utility purposes.

RECREATION

Songs, games, and stunts.

No girl permitted to elect more than two projects.

Recreation to be engaged in by student body.

Note.-Inquiries concerning these courses should be addressed to Mrs. Jane S. McKimmon, State Department of Agriculture, Raleigh, N. C.

| 120 |
|----------|
| ~ |
| 0 |
| ÷. |
| - |
| |
| 02 |
| - |
| - |
| ~ |
| 0 |
| _ |
| - |
| |
| ~ |
| - |
| 0 |
| |
| - |
| |
| 7 |
| - CO. |
| 0 |
| - |
| - |
| A |
| - |
| 25 |
| - |
| _ |
| - |
| n |
| - |
| - |
| - |
| |

TO STATE COLLEGE SUMMER SCHOOL

| Name in full |
|--|
| Home Address: P. O. |
| County |
| Courses desired |
| APARTARANAN ATALALARANANANANAN ANTININANANANANANANANANANANANANANANANANA |
| Are you a high school graduate?; Have you at cuded any other college? |
| Name |
| In ease of sickness notify- |
| Mdhws |
| Church preference. |
| Date of application |
| (As soon as you decide to attend State College Summer School, please fill out above blank and mail to the Director.) |

