North Carolina State College

Summer School

June 14—July 23, 1926

State College Station
Raleigh

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Summer School

JUNE 14—JULY 23, 1926

Announcement *of* Courses

North Carolina State College
of Agriculture *and* Engineering

State College Station
Raleigh

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DIRECTOR OF THE SUMMER SCHOOL

State College Station

Raleigh, N. C.

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GENERAL INFORMATION

The thirteenth Summer Session of the North Carolina State College of Agriculture and Engineering will begin with registration on Monday, June 14, and close with final examinations on Friday, July 23, 1926. 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, especially teachers of science, 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 1926, as in 1924 and 1925, will attempt to give 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, college credit courses will be offered in practically all of the subjects taught in the regular session.

HIGH SCHOOL PRINCIPALS AND SCIENCE TEACHERS

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

Dr. J. 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 the 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 six-weeks 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 June 21 and run till Saturday noon, July 3. This is for the teachers now in service. Persons taking this course for credit will be required to begin class work June 21. 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 home economics and agriculture is provided for farm women from June 14 to June 19. Instruction will be offered in food preparation, meal planning, clothing, house furnishings, and poultry.

BOYS' AND GIRLS' CLUB WORK

A special term from July 5 to July 12, 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 aid 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 men, and are not intended for boys, nor for men who lack earnestness 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 industrial 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 classroom.

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 two of the first three courses in the list on opposite page and one course selected from the remainder of the list.

Ed. s105. Practical Arts Problems. Ten hours per week; three credits.
Ed. s106. The Theory of Industrial Arts in the Elementary School. Five hours per week; three credits.
Tex. s115. Courses for Teachers. Four hours per week; two credits.
Ed. s230. Vocational Guidance. Five hours per week; three credits.
Ed. s201. Educational Psychology. Five hours per week; three credits.
Ed. s210. Educational Tests and Measurements. Five hours per week; three credits.

NOTE.—The above courses are described elsewhere in this bulletin.

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 coaching 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 athletics and physical training in schools and colleges throughout the country.

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, basketball, 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, five periods a week. Since, however, no student will be allowed to take more than eighteen hours of work per week without special permission, this restriction will prevent a student's taking more than one ten-period course.

Thirty days of work during the six weeks will be accepted for a term's work if all the requirements of the course are met. This includes one day for registration and one day for examination.

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 full 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 special attention will be given to their comfort and welfare.

ENTERTAINMENTS AND SOCIAL FEATURES

Arrangements are being made for several high-grade entertainments, including lectures and music, during the session. A reception for students and faculty, followed by other social and recreational events such as week-end picnics 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	$ 12.50
*Tuition (except for teachers)	10.00
Room rent, each person (two or more in room)	7.50
Board	30.00
	$60.00

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. It 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.

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* FREE TUITION FOR TEACHERS

Exemption from the payment of the $10.00 tuition fee is provided by legislative enactment for teachers now in service in the schools of North Carolina, and for residents of the State who are preparing to teach during the school year 1926-27.

Teachers now in service and students preparing to teach, who are residents of the State, will be required to sign the usual teacher's agreement to teach in North Carolina for at least six months, or to pay the tuition within one year from date of registration in case they do not teach.

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 $9 a week. No guest, however, is expected to occupy any room unless previously assigned thereto by the Superintendent of Buildings. 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.

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 $12.50 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 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 Superintendent of Buildings. In no case may a room be taken until it has been regularly assigned.

Watauga Hall, which has been completely worked over and made into one of the best dormitories on the campus, with hot and cold water in every room, will be reserved for the women who attend the Summer School. This is the most conveniently located dormitory at the College, being surrounded by the dining hall, the gymnasium, administration building, the library, and the infirmary. Fourth, fifth, and sixth dormitories will be assigned to the men, and a suitable place in one of these dormitories will be set apart for the married couples attending Summer School.

SELECTION OF COURSES

The advisers of the different groups will be available at the College during the morning and afternoon of the opening day 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 14. It is desirable that persons who expect to attend the Summer School give notice to the Director in advance, but this is not necessary. Those who wish to have rooms reserved may pay the registration fee of $12.50 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 14, so that they may begin class work on the morning of Tuesday, June 15, 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 eighteen hours for credit, unless special permission is granted by the Director. 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 carrying numbers of 100 or above offered in Summer School are college-credit courses.

CREDITS

Summer School credit will not be given to any one whose class attendance, scholarship, or deportment is unsatisfactory, or to any one 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 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 swimming pool is located in an annex amply lighted both by windows and skylights, and finished with white tile. The pool is 75 by 30 feet, with room sufficient to accommodate several hundred spectators.

REDUCED RATES ON RAILROAD

The Southern Passenger Association has granted reduced rates on account of our Summer School and conferences held in connection with the State College Summer School at one and one-half fare for the round trip, a minimum fare of $1.00 from all stations in North Carolina except stations on the L. and N. Railroad and the Winston-Salem Southbound. These tickets will be sold on the identification certificate plan. All persons interested in securing these reduced rates should write in for a certificate, which will be forwarded on request.

Tickets will be sold June 12-14, inclusive; June 19-21, inclusive; June 26-28, inclusive; July 3-5, inclusive; July 10-12, inclusive; July 17-19, inclusive, and July 25-27, inclusive, final limit of all tickets August 4th; tickets to be validated by the regular ticket agents at Raleigh before return journey is commenced.

COURSES TO BE OFFERED IN THE SUMMER SCHOOL

AGRONOMY

Agron. s1. Cotton Classing. Twenty hours a week for six weeks. 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 stapling 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.

Agron. s201. Cereal Crops. Prerequisite: General Field Crops. Five 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. s210, Cotton Production, or s215, Tobacco Production. Five 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.

Agron. s230. Advanced Seed Judging and Grading. Prerequisite: Cereals. Five 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, $2.

Agron. s251. Advanced Study of Crops Research. Undergraduate credits, 3-9; Graduate credits, 2-6. Elective for graduates and advanced undergraduates. Mr. Darst, Mr. Cotner.

A field study of the research work and demonstration work in crops. This course will be based directly upon experimental work in progress. The crop or crops for study will be agreed upon by the class.

Agron. s291. The Soils of Western North Carolina. Six weeks; 9 credits. Elective for Juniors and Seniors in Agriculture. Mr. Cobb, Mr. Lee.

A summer field course covering the important soil areas of the Piedmont and Mountain regions of North Carolina. A field examination of the important soil types will be made, and their origin, classification, characteristics, crop adaptation, and fertilizer requirements will be studied. A stop of several days will be made at a suitable locality for the purpose of making a soil map.

Offered during the summer of 1926.

Agron. s292. The Soils of Eastern North Carolina. Nine credits. Elective for Juniors and Seniors in Agriculture. Mr. Cobb, Mr. Lee.

A summer field course similar to Course 291, but covering the soil regions of Eastern North Carolina.

Offered during the summer of 1927.

TWO-WEEKS COURSES

Agron. s206. Seed Judging and Crop Identification. One hour a day for two weeks; one credit. 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. s207. Fertilizers. One hour a day for two weeks; one credit. 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 soils of the State are considered.

ANIMAL HUSBANDRY AND DAIRYING

A. H. s102. Animal Nutrition. Ten times a week; 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. Five times a week; three term credits. Mr. Hostetler.

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. Eight times a week; four 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. Five times a week; 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 swine 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. 203a. Stock Judging. Five hours a week; two weeks; one credit. 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 contests.

A. H. s208. Stock Farm Management. Five times a week; 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. s211. Advanced Nutrition. Eight times a week; four 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. Hygiene and Sanitation of Farm Animals. Five hours a week; 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.

A. H. s218a. Hygiene and Sanitation of Farm Animals. Five hours a week; two weeks; one credit. 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 contagious 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.

BOTANY

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

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

(1) 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 s202. General Bacteriology. Four credits. Prerequisite: Elementary Biology. Mr. Wells.

This course gives an introduction to the principles of bacteriology. All of the various fundamental phases of bacteriology are taken up. Through laboratory work, the student learns modern cultural methods of handling and studying bacteria. Toward the latter part of the term opportunity will be offered students to do special laboratory work on water, milk and disease producing bacteria, if they so desire.

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

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, wild flowers, and weeds of the State.

CHEMISTRY

Chem. s101-A-a. General Chemistry. Five hours lecture and four hours laboratory. Four credits. Laboratory fee, $3. Mr. Randolph.

The fundamental principles and phenomena of chemistry are studied and demonstrated. The metals and non-metals and their compounds are studied separately and systematically. Industrial applications of the more important chemical processes are studied in detail.

Chem. s101-A-b. General Chemistry. Five hours lecture and four hours laboratory. Four credits. Laboratory fee, $3. Mr. Randolph.

A continuation of General Chemistry.

Chem. s111. Qualitative Analysis. Two hours lecture and fourteen hours laboratory. Four credits. Prerequisite: General Chemistry. Laboratory fee, $3. Mr. Wilson.

This course corresponds with the work of the regular college course in Qualitative Analysis.

Chem. s112. Quantitative Analysis. Two hours lecture and fourteen hours laboratory. Four credits. Prerequisite: Qualitative Analysis. Laboratory fee, $3. Mr. Wilson.

This course corresponds with the first term of the college course in Quantitative Analysis.

Chem. s221-a. Organic Chemistry. Six hours lecture and five hours laboratory. Four credits. Prerequisite: General Chemistry. Laboratory fee, $3. Mr. Wilson.

This course is equivalent to the first term of college Organic Chemistry.

Other courses in General Chemistry and in Chemical Engineering listed in the College catalogue will be given if registration warrants.

ECONOMICS

Econ. s101. Commercial and Business Geography. Eight times a week; 4 credits. Mr. Robertson.

Production of raw material, basic manufacturing industries, international trade, trade routes, and industrial development.

Econ. s103. General Economics. Five hours a week; 3 credits. Elective. Mr. Forster.

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. s212. Statistical Method. Five hours a week; 3 credits. Elective. Prerequisite: Economics 102. Mr. Forster.

A study of the elements of statistical methods, statistical types, collection and analysis of statistical data.

Econ. s217. Advertising. Five times a week; three credits. Prerequisite: Economics 102. Mr. Robertson.

The practical application of psychological principles to advertising methods, advertising research studies, sales campaigns, with special attention to the preparation and writing of advertising copy.

Econ. s265. Farm Marketing. Five hours a week; three credits. Required of Seniors in Agricultural Administration, Agriculture, and Vocational Education. Prerequisite: Economics 102. Mr. Forster.

A study of the economic principles underlying successful marketing of farm products, market organization and control, price-making forces, and critical examination of the present system of marketing farm products.

Econ. s361. Farm Organization and Management. Elective. Five periods a week; three credits. Mr. Forster.

In this course special consideration is given to the application of economic principles and statistical methods to the solution of farm management problems. For this purpose actual farm records on farms from various parts of the State are available. The course is primarily intended for those who have had General Economics and Statistics.

Econ. s366. Marketing Methods and Problems. Elective. Five periods a week; three credits. Mr. Forster.

This course will consist of a study of the major problems in the field of agricultural marketing. The problems related to prices and the marketing mechanism will be given special consideration. The course is designed primarily for those students who have had General Economics and the first course in Farm Marketing.

EDUCATION

Ed. s104. Theory of Industrial Arts in the Elementary School. Two 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 classroom use. Primarily for teachers and supervisors of the elementary schools.

Ed. s105. Practical Arts Problems. Two hours a week; three credits. Mr. Boshart.

Treats of the selection and organization of suitable projects in Industrial Arts and the working out in detail of such as will meet the needs of the class. The meaning of Industrial Arts and the methods of making it a part of the regular work of the school will be discussed. For teachers in the elementary schools who have had teaching experience and who have not had special work in Industrial Arts.

Ed. s201. Educational Psychology. Five 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. s208. Visual Aids. Five periods; three credits. Mr. Armstrong.

Instruction and practice in the use of blackboards, charts, graphs, maps, 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. s210. Educational Tests and Measurements. Five 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. s216. Problems of the High School Teacher. Five 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 pupil; discipline; classroom technique; training in habits of study; the curriculum; student rating; salaries; professional duties and responsibilities; school morale, and extra-curricular activities.

Text-books, lectures, readings, and reports.

Ed. s217. Method of Study. Five periods; three credits. Mr. Cook.

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

Ed. s222. Special Problems in Teaching Agriculture. Five 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 equipment, gathering specimens and illustrative materials, and the organization of courses of study.

Ed. s226. Methods of Teaching Modern Languages. Five hours a week; three credits. Mr. Mumford.

The purpose of this course is to present the problems connected with the teaching of Modern Languages in such manner as to be of the maximum benefit to all Modern Language teachers as well as to language students who are preparing to teach. It includes discussions of the various methods and theories of language teaching; the aims in Modern Language instruction; organization of material; the subject-matter and apparatus of teaching, including such topics as text-books, pronunciation, grammar, reading, literature, composition, vocabulary building, dictation, oral drill, examinations, tests, and extra-class activities.

Ed. s228. Methods of Teaching History. Five periods; three credits. Mr. Lefler.

A course in the method of teaching the social sciences, including the selection of subject-matter, together with the devices and techniques employed in presenting it to secondary school pupils.

Ed. s230. Vocational Guidance. Five times 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. s246. Problems in School Administration. Five 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 text-book 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.

Text-books, lectures, readings, and reports.

Ed. s247. Problems in Secondary Education. Five 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 scores; supervision of study; class schedule making; duties of the principal; supervision of instruction; selection of teachers; teaching load, salaries; professional ethics.

Text-books, lectures, readings, and reports.

Ed. s250. Methods of Science Teaching. Five 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. s251. Materials in Science Teaching. Five 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. s252. Advanced Methods in Science Teaching. Five hours; three credits. Mr. Bowden.

A course for advanced students in science teaching. It will consider some of the important problems of the science teacher and the results of recent investigations.

Ed. s255. Rural Education. Five hours; three credits. Mr. Mayer.

Objectives and needs of rural education, problems in rural educational advancement, organization for efficient results, prevocational and vocational work.

Ed. s266. Organization and Administration of Part-time and Continuation Schools. Five hours a week; three credits. Mr. Coggin.

A study of the part-time and continuation schools as to their place in an educational system; the selection and organization of teaching materials; the preparation of type lessons; the division of time allotments; the methods of teaching, and the procedure in organization of classes. Primarily for principals and teachers who are attempting or planning to attempt work of this character.

Ed. s301. Visual Instruction. Five 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. s305. Problems in Agricultural Teaching. Five 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. s320. The Administration of Vocational Education. Five times a week; three credits. Staff of the Division of Vocational Education.

This course will deal with legislation which has made possible the Vocational Education program under the Smith-Hughes Act; something of the history of the movements leading up to the passing of the Smith-Hughes Act. It will also deal with the general administration of the act from both the Federal and State standpoint. It will then take up in detail the organization and programs of the four distinct departments, viz., Department of Agricultural Education, Home Economic Education, Trades and Industrial Education, and Vocational Rehabilitation. For these four particular phases of the course, the State Supervisors will be called in to give the instruction.

ENGINEERING

C. E. s105. Mechanics. Five hours per week; three credits. Mr. Foster. Prerequisite: Trigonometry and Analytics, Mathematics 103 and 104.

Statics, including concurrent forces, parallel forces, non-concurrent forces; friction, centroids, moment of inertia, rectilinear motion, curvilinear motion, and rotation.

M. E. s102. Engineering Drawing. Eight or fifteen hours a week; two or four credits. Required of Engineering Freshmen. Mr. Foster.

Drawing-board work, covering lettering, orthographic projection, auxiliary projection, isometric projection, cabinet projection, intersection and development, working drawings, and blue-printing.

M. E. s103. Descriptive Geometry. Four or eight hours per week; one or two credits. Mr. Briggs.

This work covers the representation of geometrical magnitudes, by means of points, lines, planes, and solids, and the solution of problems relating to them.

M. E. s104. Forge Work I. Eight hours per week; one credit. Mr. Price.

Instruction in the use of the forge and the different tools used in shop work. Lectures and demonstrations on the forging of iron and steel.

M. E. s105. Woodshop. Five or ten hours a week; one or two credits. Mr. Wheeler.

Use of bench tools, reading blue-prints, making cabinet joints, operation and care of wood-working machinery. Correct methods of staining, varnishing, filling and gluing.

M. E. s107. Mechanical Drawing. Twelve hours per week; three credits. Mr. Briggs.

Drawing-board work, covering machine fastenings, pipe fittings, elementary cams, technical sketching, working drawings, tracing and blue-printing.

M. E. s110. Forge Work II. Eight hours per week; one credit. Mr. Price.

Forging of iron and steel. Tool-making, hardening and tempering, case-hardening and annealing.

M. E. s118. Machine Shop I. Ten hours a week; two credits. Mr. Wheeler.

Required of Seniors in Chemical and Juniors in Ceramic and Mining Engineering.

Instruction in the use of hand and machine tools.

M. E. s130. Metal Work. Fifteen hours a week; three credits. Mr. Wheeler.

Instruction will be given in elementary phases of metal work, including filing, chipping, drilling, bending and forming, and problems on the drill press, lathe, and shaper. Intended for teachers of general shops where metal work will be a part of the course offered.

M. E. s132. Woodworking for Teachers. 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 wood-working classes in the junior and senior high schools. Special attention will be given to the problems of selecting suitable equipment and its installation.

M. E. s134. 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.

M. E. s136. 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.

ENGLISH

Eng. s101. Rhetoric and Composition. Five hours a week; three credits. Mr. Clark.

Principles of writing; illustrative readings; frequent short exercises; descriptive, narrative, expository, and argumentative writing; one longer paper during the term; collateral reading. Conferences.

Eng. s123. The English Novel. Five hours a week; three credits. Prerequisite: English 101. Mr. Clark.

A study of the novel with regard to its English origins, its structural development, and its historical and social settings. The works of the greater novelists will be studied appreciatively as literature, and an attempt will be made to trace their essential characteristics with a view to criticising the value and tendencies of the novel today. A brief study of the structural development and chief types of the short story will follow.

Eng. s150. Elements of Journalism. Five times a week; three credits. Mr. Robertson.

A course which endeavors to combine the functions of securing, writing, and handling news. Particular attention is given to interviews and the various methods of story presentation. Practice is given in writing different types of newspaper stories.

Eng. s160. Public Speaking. Five hours a week; three credits. Mr. Cunningham.

A practical course for beginning students in extemporaneous speaking and for those who desire to learn how to judge intelligently the effectiveness of a public speech. The fundamentals aimed at are: thought conception, power of analysis, orderly arrangement of ideas, self-control before an audience, and an apt and forceful extempore presentation. Exercises and speeches are prepared and delivered by the students, a text-book is studied, and lectures and personal suggestions and criticisms are given by the instructor. Some attention is paid to the development of the effective speaking voice.

Eng. s207. English for Teachers. Five hours a week; three credits. Prerequisite: English 101 or equivalent. Mr. Clark.

The purpose of this course is to discuss various methods of teaching English. All discussions will be based upon definite assignments of reading.

Eng. s230. Shakespeare. Five hours a week; three credits. Prerequisite: English 101. Mr. Clark.

An analysis as regards technique and interpretation of the following dramas: Macbeth, Othello, The Winter's Tale, Twelfth Night, and King Henry the Fifth. Reports on parallel readings will be discussed in open forum session. Graduate students will be required to submit a thesis on some particular subject related to the Elizabethan drama.

Eng. s252. Magazine and Feature Writing. Five times a week; three credits. Prerequisite: English 150 or equivalent. Mr. Robertson.

Lectures and discussions upon the preparation of articles for magazines and newspapers. Emphasis is placed on originality of ideas, organization of material, and correctness and vigor of expression. The aim of the course is to develop both the creative and the critical ability of the student.

Eng. s237. Contemporary Literature. Five hours a week; three credits. Mr. Cunningham.

A survey of the work of American writers since the beginning of the twentieth century. The course serves as an introduction to that literature which, because of its recency, is not included in easily accessible histories and anthologies. Special attention will be paid to the poetry of Robinson, Frost, Lindsay, Masters, Amy Lowell, Millay, Weaver, Sandburg, and Sarett; to the prose fiction of London, O. Henry, Garland, Dreiser, Tarkington, Hergesheimer, Cabell, Sinclair Lewis, Wharton, Cathar, and Sherwood Anderson; to the drama of Thomas, Moody, Mackaye, Glaspell, and Eugene O'Neill, and to the essays of Muir, Burroughs, E. H. Howe, Santayana, Randolph Bourne, and H. L. Mencken. Text-book assignments, lectures, readings, discussions.

Eng. s261. Argumentation and Debate. Five hours a week; three credits. Mr. Cunningham.

A course for teachers who are called upon to coach debate teams, for students who expect to participate in intercollegiate forensics, and for all who are interested in the application of the principles of conviction to informal argument and professional speech. It includes training in the analysis of public questions, in accurate thinking and speaking, in securing speech materials, in defining issues, in the use of sound evidence, in brief-making, and in the organization and delivery of extemporaneous, argumentative speeches. Text-book assignments, exercises, lectures, research.

Eng. s262. Persuasion. Five hours a week; three credits. Mr. Cunningham.

A study of the principles that govern persuasive discourse, including the approach to the individual and to the group audience. This course considers such topics as: analysis of purpose, analysis of audience, the psychological forces that move men to believe and to act, methods of conciliation, of securing and holding attention, and of winning response. Application of these principles in extempore speeches and discussions. Lectures, collateral readings, exercises, speeches.

GEOLOGY

Geology s291. Geology of Western North Carolina. Nine credits. Elective in the Schools of Engineering and Science and Business. Prerequisite: Geology 125. Mr. Cobb.

A summer field course dealing with the geology of the Piedmont and Mountain districts of North Carolina. Mines, mineral and clay deposits, and rock quarries will be visited and studied as well as the geological formations of Western North Carolina. During the course a stop of several days will be made for the purpose of making geological maps.

Offered during the summer of 1926.

Geology s292. Geology of Eastern North Carolina. Nine credits. Elective in the Schools of Engineering and Science and Business. Prerequisite: Geology 125. Mr. Cobb.

A summer field course dealing with the geological formations and deposits of economic importance in Eastern North Carolina. The course will include the making of a geological map and a study of coast and shore-line development.

Offered during the summer of 1927.

HISTORY

Hist. s101a. American Economic History. Five times a week; three credits. Mr. Lefler.

Discovery, colonization, economic background of the Revolution, government foundations, wars, presidential administrations, public lands, public finance, agriculture, and industry.

Hist. s102. European History. Five times a week; three credits. Elective. Mr. Lefler.

Early European history, industrial revolution, agriculture and industry in major nations, modern and contemporary history, World War.

Hist. s105. Methods of Teaching History. Mr. Lefler. (See Ed. s228.)

MATHEMATICS

Math. s101. Algebra. Five credits. Mr. Williams.

Prerequisite: Entrance Mathematics.

This course includes the progressions, binomial theorem, undetermined co-efficients, logarithms, compound interest and annuities, permutations, combinations, the general theory of equations, the solution of higher equations, etc.

Math. s102. Solid Geometry. Five credits. Mr. Williams.

Prerequisite: Entrance Mathemati

The three books of Solid Geometry, including numerous original exercises, are covered in this course.

Math. s103. Plane Trigonometry. Five credits. Mr. Fisher.

Prerequisite: Entrance Mathematics.

Definitions of the trigonometric functions, derivation of formulæ, solutions of plane triangles, solutions of many practical problems, etc.

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. Five credits. Mr. Fisher.

Prerequisite: Mathematics 104.

An elementary course on the fundamental principles of the Calculus, including the development of the formulæ for differentiation with their applications to problems in rates, maxima and minima, etc.

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

Development of formulæ 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. Five hours a week; three credits. Mr. Hinkle, Mr. Mumford.

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: Olmsted's First Course in French.

Mod. L. s102. German I. Beginners' German. Five hours a week; three credits. Mr. Hinkle.

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. s103. Spanish I. Beginners' Spanish. Five hours a week; three credits. Mr. Hinkle, Mr. Mumford.

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

Mod. L. s104. Elementary French Prose. Five hours a week; three credits. Mr. Hinkle.

This course is primarily a reading course on topics dealing with the development of French civilization and literature. The reading material in the texts used is supplemented by lectures on French manners and customs. The work is conducted in such a way as to increase facility in the use of narrative French and at the same time develop an accurate concept of the nature of present-day France.

Mod. L. s106. Elementary Spanish Prose. Five hours a week; three credits. Mr. Hinkle.

This course is primarily a reading course on topics dealing with the development of the Spanish civilization and literature. The reading material in the texts used is supplemented by lectures on Spanish manners and customs. The work is conducted in such a way as to increase facility in the use of narrative Spanish and at the same time develop an accurate concept of the nature of present-day Spain.

Mod. L. s107. Introductory Scientific German. Five hours a week; three credits. Mr. Hinkle.

This is a reading translation course in elementary scientific German literature. 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: To be selected.

Mod. L. s208. Conversational French. Five hours a week; three credits. Mr. Mumford.

This course is essentially a practice conversational course in French. Much attention is given to use of idiomatic construction and to training the ear to understand the spoken language. Its aim is to acquaint the student with ordinary, every-day conversation.

Mod. L. s209. Conversational Spanish. Five hours a week; three credits. Mr. Hinkle.

Prerequisite: Spanish 106 or equivalent.

This course is essentially a practice conversational course in Spanish. Much attention is given to the use of idiomatic construction and to training the ear to understand the spoken language. Its aim is to acquaint the student with ordinary every-day conversation.

Mod. L. s215. Methods of Teaching Modern Languages. Mr. Mumford. (See Ed. s226.)

PHYSICAL EDUCATION

P. E. s4. Playground Course with Group Games. Mr. Miller, Mr. Parker.

This course will be given without credit one evening each week. All students, both men and women, are invited to participate to make it a success as an instruction and recreation hour.

P. E. s111a. The Theory and Practice of Gymnastic Teaching. Three times a week; one credit. Prerequisite: Physical Training 102. Mr. Miller, Mr. Parker.

This will be a special course for those expecting to teach physical training or supervise it. It will consist of the progression and value of graded work in light and heavy apparatus, calisthenics, drills and marching. Methods and practice of teaching the work will be stressed and nomenclature, use of voice and qualifications of the teacher will be covered. Mr. Parker.

P. E. s112-a. Football Coaching. Three times a week; one and one-half credits. Mr. Miller, Mr. Parker.

This course will be a lecture and notebook course with enough practice to emphasize what is covered in theory. The rules, equipping, conditioning, position play, systems of defense and offense, formations and team work, generalship and strategy, and all fundamental play will be covered.

P. E. s112-b. Basketball Coaching. Three times a week; one and one-half credits. Mr. Miller, Mr. Parker.

Basketball is fast becoming a very popular sport. The different systems of offense and defense will be given in this course. Fundamentals of play, formations from center and out of bounds will be covered as well as rules, conditioning, and equipment.

P. E. s113. Baseball, Track and Field Coaching. Five times a week; three credits. Mr. Miller, Mr. Parker.

This class will meet five times a week. The first half of the term will be devoted to the fundamental play of baseball, individual position play, team play. The second half will be given over to the training for individual track and field events, running off and conduct of meets and conditioning of men for events.

PHYSICS

Physics s101. General Physics. Four or eight credits. Mr. Heck.

An elementary course in college physics covering two terms of the work done in the winter session. The two terms may be taken simultaneously or either term may be taken alone. The first term covers general mechanics and the second term heat and sound. Five hours class work and five hours laboratory for each term's work.

Phys. s103. Advanced General Physics. Five or ten credits. Mr. Derieux.

An advanced treatment of General Physics. First term work may be taken or the second term, or the two simultaneously.

Physics s203. Advanced Heat and Thermodynamics. Three or six credits. Mr. Derieux.

Prerequisite: Physics 103 or 104, and Mathematics 202.

A course embracing the following subjects in heat: atomic heats, change of state, liquefaction of gases, critical temperature, triple point, hygrometry, first law of thermodynamics, kinetic theory of gases, adiabatic transformations, Carnot's cycle and second law of thermodynamics, applications of same, internal work on expansion, electrical instruments for heat measurement, and radiation.

Physics s310. Crystal Structure and X-Rays. Three credits. Mr. Derieux.

Prerequisite: Physics 102 or 103.

Diffraction of waves, X-ray spectrometer, properties of X-rays, crystal structure, X-ray spectra, analysis of crystal structure of rock-salt, sylvine, diamond, zincblends, etc., molecular solution, space latices-cube, cube-centered, face-centered, oblique crystals, on-uniform spacing, arrangement of atoms, scattering of X-rays, intensity of X-ray reflectic, absorption of X-rays.

Physics s311. Research. Three to six hours credit. Mr. Heck.

For students equipped to do research in Physics work will be offered in amount and on subjects as desired.

POULTRY SCIENCE

Poul. s101. General Poultry. Five hours a week for six weeks; three credits. Dr. Kaupp.

Three one-hour recitations, two laboratory periods of two hours each. Scope of the poultry industry and its possibilities; first, from the farm department standpoint and, second, as a separate business. Includes general problems, as sanitation, location of poultry houses, principles of poultry house construction, and general problems of small flock production.

Poul. s105. Advanced Poultry Production. Five hours a week for two weeks; one credit. Mr. Armstrong.

Three one-hour recitations and two two-hour laboratory periods a week. Taught from the job analysis standpoint.

The newer thoughts in feeding, hatching, rearing, growing, fattening, preparing for market and marketing, sanitation, hygiene, poultry house construction, selection, mating and production. The care of poultry products from the flush season to the season of scarcity. Size of flock to establish, coöperative organization, selling, buying; starting the flock by buying and incubating éggs, baby chicks, or by buying mature fowls. Laboratory exercises include caponizing, grading and packing eggs, dressing, grading, scoring, and packing dressed poultry, shipping live poultry, trap-nesting flock, keeping the records.

Poul. s204. Poultry Diseases. Five hours a week for six weeks; three credits. Dr. Kaupp, Mr. Dearstyne.

Three one-hour recitations and two two-hour laboratory periods a week. Medical parasitology, poultry plant problems and control. Systematic study of non-contagious and contagious diseases and practical means of control.

Serotherapy, 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.

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

Three one-hour recitations and two two-hour laboratory periods. Detailed study from the production standpoint of grading, packing, handling, storing, preserving, pickling, refrigerating, storing, and shipping of eggs. 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 in dressed and live poultry shipments.

Poul. s209. Poultry Diseases. Five hours a week for two weeks; one credit. Mr. Kaupp, Mr. Dearstyne.

Three one-hour recitations and two two-hour periods a week. A discussion of conditions influencing the health of fowls; disease conditions with illustrations, preserved specimens from the poultry pathology museum, and by cases in the poultry hospital, autopsies from the disease research laboratory.

How to recognize and treat diseases, preparation of vaccine, 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.

Poul. s210. Poultry Judging. Five hours a week for two weeks; one credit. Mr. Armstrong.

This course is designed for the agricultural high school teacher that he may be better fitted to teach poultry judging, both standard and utility, and to train judging teams. It is the basis for proper breeding. Emphasis laid on Rhode Island Reds, Leghorns, Plymouth Rocks, and Wyandottes, both from the standpoint of standard qualities and egg production.

SOCIOLOGY

Soc. s102. Social Problems. Five times a week; three credits. Mr. Taylor.

This course offers an inductive introduction to the field of Sociology by taking up a number of social problems which are already somewhat familiar to every one. These are problems confronting every community and our general citizenry. The outstanding problems to be considered are: poverty, crime, divorce, immigration, population and race problems. This course, therefore, is a natural introduction to the Sociology Courses, which deal more directly with social theory.

Soc. s103. Social Principles. Five times a week; three credits. Mr. Taylor.

This is a course in the general principles of Sociology. It deals with all the biological, geographical, economic, and psychological bases of our social life; takes up the problem of social origins, social progress, social forces, and social change. At the end of the course will be woven in considerable social psychology.

Soc. s202. Rural Sociology. Five times a week; three credits. Mr. Taylor.

This course deals with the social aspects of rural life. It gives consideration to a number of specific rural social problems, such as rural recreation, rural health, rural schools, rural churches, the farm home, rural art, and similar problems. It spends considerable time in discussing rural community organization and community life, and concludes with the consideration of the psychology of rural life and the farmer's place in civilization.

TEXTILES

Tex. s1. Yarn Manufacture. Special course for Mill Men. 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 spend his whole 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, Mr. Hart.

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 will be given to coördinate the theoretical with the practical. Any or all subjects may be studied. A mill man desiring to spend his whole time in the Textile School will be permitted to do so.

Tex. s3. Textile Study for Cotton Classers. Mr. Nelson.

This course is arranged to give those who are taking cotton grading a general outline of Textile Manufacturing. It will consist of a non-technical study of the different machines used. The amount of waste in different grades of cotton will be discussed and other points which will give the cotton grader an insight into some of the problems of the cotton manufacturer.

Tex. s101. Textile Principles. One credit. Mr. Nelson, Mr. Hart.

Elementary calculations for yarns and fabrics; harness and reed calculations; loom production calculations; operation of machines.

Tex. s102. Yarn Manufacture I. Two credits. Mr. Hilton.

Study of physical properties of cotton fibers. Mixing of cotton; openers; pickers; cards; drawing frames. Description and setting of different parts. Calculations for production, speeds, and drafts. Mechanical and electrical stop motions. Setting and weighting of rolls; sliver lapper; ribbon lapper; comber; description and setting of different parts; care of machines; fly frames; builder and differential motions; roll setting; calculations for draft, twist, lay, tension, speed, and production.

Tex. s103. Power Weaving. Two credits. Mr. Nelson, Mr. Hart.

Operation of plain and gingham looms. Construction of auxiliary motions on plain looms. Cams and their construction. Automatic looms, construction and operation. Pattern chain building for gingham looms. Construction and value of pattern multipliers. Timing of drop box motion, and other studies.

Tex. s104. Fabric Structure. Two credits. Mr. Nelson, Mr. Hart.

Calculations to obtain quantities of warp and filling in fabrics. To find number of ends per inch, using a given weight of warp; also number of picks, using a given weight of filling. Yarn calculations. System of numbering woolen, worsted, silk, linen, and cotton yarns. Relations of fabric structure to design of fabric. Plain, twill, and sateen weaves. Ornamentation of plain weaves; wave designs; pointed twills; diamond effects; plain and fancy basket weaves; warp and filling rib weaves.

Tex. s105. Fabric Analysis I. Two credits. Mr. Nelson, Mr. Hart.

Analyzing plain, twill, and sateen and other fabrics made from simple weaves, ascertaining the number of ends and picks per inch in sample. Calculating weight of fabric from data obtained from sample.

Tex. s107. Fabric Design. Two credits. Mr. Nelson, Mr. Hart.

Construction of fancy weaves, such as broken twills, curved twills, entwining twills, granite weaves, sateen and other figures striped on plain ground. Imitation leno; honeycomb weaves; fabrics backed with warp or filling; fabrics ornamented with extra warp or filling; combining weaves together to produce new patterns.

Tex. s108. Fabric Analysis II. Two credits. Mr. Nelson, Mr. Hart.

Analyzing samples of fancy fabrics for design, drawing in draft, reed and chain plan. Calculating particulars to reproduce fabric from data obtained from sample.

Tex. s115. Five hours per week; three credits. Mr. Nelson.

The schools of North Carolina are placing emphasis upon the study of textiles, and are recognizing the part played by the Textile Industry in the development of civilization and in daily life.

This course is designed to give teachers a fundamental knowledge of the Textile Industry, and will include a study of various fabrics and their selection and adaptability to different uses.

Various methods of distinguishing fabrics made from different materials, such as cotton and wool, cotton and silk, cotton and linen, etc., will be given and experiments made.

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.

Tex. s201. Yarn Manufacture II. Two credits. Mr. Hilton.

Spinning, spooling, twisting. Description and setting of different parts. Builder motions for warp and filling. Bobbin holders, thread guides, traverse motion. Ply and carded yarns. Calculations for twist, speed, and production. Mill organization and administration.

Tex. s202. Dobby Weaving. Two credits. Mr. Nelson, Mr. Hart.

Preparation of warps for weaving fancy patterns on dobby looms; drawing warps in harness; starting up warps in looms; construction and fixing single and double index dobby, also dobby for weaving border patterns; springs and spring boxes for harness; pattern chain building; calculations for heddles, weight of fabrics, loom production.

ZOOLOGY

Zool. s101. General Zoology. Two lectures and two laboratories a week; four credits. Mr. Metcalf.

An elementary study of animals, with special reference to the vertebrates and the more important economic groups, is given by text-book, laboratory, and field work, with supplementary lectures. This course is designed to give the student a general knowledge of the animal kingdom.

Zool. s202. Economic Entomology. Two lectures and one laboratory a week; three credits. Mr. Metcalf.

Prerequisite: Zoology 101.

A study of the economic importance of insects in relation to North Carolina agricultural conditions, the health of man and domestic animals, with emphasis placed on their specific control.

Zool. s204. Systematic Entomology or Zoology. One lecture and two laboratory periods a week; three credits. Mr. Metcalf.

Prerequisite: Zoology 101, 202, or 203.

A study of the classification of various groups of animals. The student may elect to devote his time to a systematic review of the animal kingdom, or to any special group.

APPLICATION FOR ADMISSION
TO
STATE COLLEGE SUMMER SCHOOL

Name in full.....

Home Address: P. O....., R. F. D.....

County ....., State.....

Courses desired.....

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Are you a high school graduate?.....; Have you attended any other college?.....

Name .....

In case of sickness notify.....

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Date of application.....

(As soon as you decide to attend State College Summer School, please fill out above blank and mail to the Director.)