

# CORNELL UNIVERSITY OFFICIAL PUBLICATION

Volume XXVII

Number 14

## Announcement of the Summer Session

University and State  
Summer Schools

1936

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## THE CALENDAR

July 6, Monday	Registration, 8 a.m.—5 p.m., <i>Drill Hall</i> . Fees are due for payment at the Treasurer's office, <i>Morrill Hall</i> .
July 7, Tuesday	Instruction begins at time and place announced for each course. Registration is continued at the Registrar's office, <i>Morrill Hall</i> .
July 10, Friday	Last day for payment of fees at the Treasurer's office, which closes at 4 p.m., <i>Morrill Hall</i> .
July 11, Saturday	Instruction continues on this Saturday.
Aug. 13, Thursday	Final examinations begin.
Aug. 14, Friday	Summer Session ends, 4 p.m.

## SPECIAL EVENTS

June 15, Monday	Summer Field Course in Geology begins, <i>Spruce Creek, Pennsylvania</i> .
June 22, Monday	First unit course in Hotel Administration begins, 9 a.m., <i>Martha Van Rensselaer Hall</i> .
June 29, Monday	Course in Architectural and Landscape Design begins, 8 a.m., <i>White Hall</i> .
July 2, 3, and 4	Symposium on Nuclear Physics, <i>Rockefeller Hall</i> .

## THE SUMMER SESSION CALENDAR

THE SUMMER SESSION CALENDAR carries announcements of all public exercises held in connection with the Summer Session. It is posted on the bulletin boards.

## THE SUMMER SESSION OFFICE

The Summer Session office is located during July and August in Room 245 Goldwin Smith Hall. The office will be open from 8:30 A.M. to 12:30 P.M. and from 1:30 P.M. to 4:30 P.M., daily except Saturday; on Saturday the office will close at 12:30 P.M.

During the rest of the year the Summer Session office is located in Room 249 Plant Science Building.

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# CORNELL UNIVERSITY SUMMER SESSION

## University and State Summer Schools

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## GENERAL INFORMATION

Cornell University was founded in 1865. It is located in the Finger Lakes region of west central New York. The campus lies some 400 feet above the south end of Cayuga Lake, which it overlooks. Photographs of the campus and its surroundings are available in a book of pictures, which will be sent by the Secretary of the University upon request.

## HISTORY OF THE SUMMER SESSION

The first summer session of Cornell University was held in 1893. In 1911 a summer session of the State College of Agriculture was established as an independent but affiliated unit. In 1923 a summer school of Biology was similarly organized. In 1928 courses in the State College of Home Economics were added. In 1934 these various summer schools were combined and placed under the direction of a single administrative board.

## OBJECT OF THE SUMMER SESSION

The primary object of the Summer Session is to carry on the work of the several Schools and Colleges of the University during the summer vacation period. By doing this it provides the opportunities for almost uninterrupted work throughout the year to graduate and undergraduate students regularly enrolled in the University, and at the same time places the facilities of the University at the disposal of many persons who would otherwise be unable to use them. Instruction in the Summer Session is accordingly arranged to meet the particular need of several groups of students: graduate and undergraduate students enrolled in the regular year who wish to continue their work during the summer; teachers, principals and superintendents in public and private schools who wish to continue their professional training; professors and instructors in colleges, and teachers in schools who wish to carry on specialized work in their particular fields; students planning to enter the University who wish to complete entrance requirements, or obtain advanced credit at entrance; and other persons who may wish to take advantage of the summer months to further their education.

## ADMISSION TO THE SUMMER SESSION

Except as stated in the next paragraph, the Summer Session is open to all persons qualified to do the work of any of the courses offered. Each person must be able to satisfy the instructor in each course he plans to take that he is qualified to do the work of that course. No examinations or applications on special forms are required for admission to the Summer Session.

## ADMISSION OF UNDERGRADUATES

The following special requirements for admission are made in the case of students registered as undergraduates in Cornell University or in other institutions. Any undergraduate student in Cornell University who has been dropped or is on probation may be admitted only on the recommendation of the authorities of his college. An undergraduate student registered in an institution other than Cornell University must submit a certificate of good standing, signed by the dean or other authority of his college, before admission is granted. Certificate forms may be had upon application to the Director of the Summer Session. Students whose names have been removed from the rolls, and students on probation, are regarded as not in good standing and cannot be admitted.

## ADMISSION TO THE GRADUATE SCHOOL

For admission to the Graduate School, two requirements are made: (1) the applicant must have received a baccalaureate degree from a college or university of recognized standing, or must have done work equivalent to that required for such a degree; (2) as judged by his scholastic record, or otherwise, the applicant must show promise of ability to pursue advanced study and research.

**A student who wishes to enter the Graduate School should file application for admission in the Office of the Dean of the Graduate School by June 25. Application must be made on the formal blanks obtainable from the office of the Graduate School, and must be accompanied by complete and official transcripts of the student's previous training.**

Students planning to apply for admission to the Graduate School should read the section on Credit in the Graduate School beginning on page 14. Further information is given in the Announcement of the Graduate School, which will be sent by the Secretary of the University upon request.

## REGISTRATION

**Registration for the Session of 1936 will take place on Monday, July 6, in the Drill Hall; the hours for registration will be from 8 a.m. to 12:30 p.m. and from 1:30 p.m. to 5 p.m. Students are urged to register on this day. Advance registration, either in person or by mail, cannot be arranged.**

Registration with the University Registrar is required for admission to any of the exercises of the Summer Session. In addition, students who wish to obtain credit for graduate work done during the Summer Session must also register with the Dean of the Graduate School. All women students must also register with the Dean of Women. Registration of automobiles to be driven in and about Ithaca by Summer Session students is also required.

Except by permission of the Director, all students are required to register for courses amounting to four credit hours as a minimum schedule. The normal schedule is six credit hours, and students are advised against registering for more.

Under certain circumstances teachers and other mature students may receive permission to register for some or all of their courses "not for credit." Students so registered are excused from examinations but are expected to perform all other work of the courses. They may secure certificates of attendance at courses so registered for.

Admission to classrooms during the Summer Session is restricted to students registered for the session. A student thus duly registered may occasionally visit any class; but if he wishes to attend regularly at classes for which he is not registered, he must secure an auditor's permit at the Summer Session office. Such permits will be granted whenever the student can show a serious purpose in such attendance. Auditors are not required to take part in the work of the courses which they visit, and certificates of attendance cannot be issued to them.

Students planning to take work in the Graduate School under personal direction, but not to attend classes, are required to register with the Registrar and the Dean of the Graduate School.

### LATE REGISTRATION

Students reaching Ithaca on July 7 or later will register at the following times and places: all students, with the Registrar, at his office in *Morrill Hall*, between 9 a.m. and 4 p.m.; graduate students, also with the Dean of the Graduate School, at his office in *Morrill Hall*, at the same hours; all women students, also with the Dean of Women, at 1 *Sage Avenue*, between 9 a.m. and 4 p.m.; owners and drivers of automobiles, also with the Committee on Traffic Control, in *Sage College*, south-east entrance, between 8:30 a.m. and 4:30 p.m. Graduate students who expect to receive residence credit toward an advanced degree for Summer Session work must register with the Dean of the Graduate School within three days of the opening of the session. The latest date for such registration in 1936 is July 9.

### CHANGES OF REGISTRATION

All changes of registration after Monday, July 6, must be made in the Summer Session office, 245 Goldwin Smith Hall. Except by permission of the Director, no changes of registration may be made after Thursday, July 9.

### WITHDRAWAL FROM THE SUMMER SESSION

A student may arrange for withdrawal at any time by cancelling his registration at the Summer Session office, 245 Goldwin Smith Hall. In such cases, the Treasurer may refund a part of the tuition fee or cancel a part of the obligation that the student has incurred

for tuition, provided the reason for the withdrawal is stated in writing and is satisfactory to the Comptroller and the Registrar. In such a case the student is required to pay twenty per cent of the term's tuition for each week or fraction of a week between the first registration day and the date of his certificate of withdrawal, **unless the withdrawal is made before noon on Wednesday, July 8.**

### CERTIFICATES FOR WORK DONE

Students of the Summer Session may receive certificates of attendance and of work performed, with grades. Application for them should be made before August 8, and the applicant must leave at the office of the Registrar a large-sized envelope stamped and directed to his home address. The certificate will then be forwarded by mail.

### ACADEMIC CREDIT

All courses offered in the Summer Session, excepting some of the unit courses of one or two weeks in length, are accepted for credit in one or more of the Schools and Colleges of the University, when taken by matriculated students in those Schools and Colleges. No student may receive credit for more than eight semester hours for work done in a single summer session.

#### IN THE COLLEGE OF ARTS AND SCIENCES

To obtain credit towards the Cornell A.B. for work done in a Cornell Summer Session, a student must previously have filed with the University Director of Admissions credentials covering the entrance requirements of the College of Arts and Sciences. He should then, in advance of Summer Session registration, secure the Dean's approval of his selection of courses. For work completed in a single Summer Session credit of not less than four nor more than eight hours will be allowed, but a total of not more than thirty hours of credit may be allowed towards the degree for all summer session work whether done at Cornell or elsewhere. The academic requirements for the degree of Bachelor of Arts are explained in detail in the Announcement of the College of Arts and Sciences.

The Summer Session records of students registered in the College of Arts and Sciences are reviewed by the usual standing committees of the College, and poor records in the Summer Session are liable to the same penalties as in the regular University session.

#### IN THE COLLEGE OF ENGINEERING

Students in the College of Engineering who desire to offer work done in the Summer Session toward requirements for graduation should consult the Director of the School in which they are regularly registered before registering in the Summer Session. Students not yet matriculated in the College of Engineering, but planning to enter it, may obtain information about its requirements by applying to the Secretary of the College of Engineering.

## IN THE COLLEGE OF ARCHITECTURE

Students in the College of Architecture who desire to offer work done in the Summer Session toward requirements for graduation should consult the Dean of the College of Architecture before registering in the Summer Session.

## IN THE STATE COLLEGES OF AGRICULTURE AND HOME ECONOMICS

Students in the State Colleges of Agriculture and Home Economics must consult with an adviser and secure his approval to the proposed schedule of courses if credit in those Colleges is to be secured. Advisers will be in the Drill Hall on registration day, July 6, and may be consulted at their offices on July 7 or later.

## IN THE DEPARTMENT OF HOTEL ADMINISTRATION

Students in the Department of Hotel Administration who desire to offer work done in the Summer Session towards requirements for graduation should consult Professor Meek of that department before registering in the Summer Session.

## IN INSTITUTIONS OTHER THAN CORNELL UNIVERSITY

The foregoing regulations apply to undergraduate students matriculated at Cornell University. Undergraduates enrolled in other institutions and wishing to have credits earned in the Summer Session applied on their work at such other institutions should, before coming to Ithaca, consult their own college authorities and make all arrangements by them deemed necessary. The Cornell Summer Session can assume no responsibility for the use to be made of credits earned by students thus coming from other places of study. The certificates mentioned above will show what courses have been taken, the amount of credit in terms of Cornell "hours," and the grades.

## CREDIT IN THE GRADUATE SCHOOL

## CLASSES OF GRADUATE STUDENTS

Students are admitted to the Graduate School in one of three classes: (1) candidates for degrees; (2) non-candidates; (3) resident doctors.

## CANDIDATES FOR DEGREES

Each student, upon admission to candidacy for an advanced degree, chooses within his general field of study a major subject to which he plans to devote the greater part of his time. He also selects one or more minor subjects, properly related to the major subject. One minor subject is chosen by candidates for the Master's degree; two minor subjects are required for the Doctor's degree.

The candidate for an advanced degree then selects from the faculty of the Graduate School a member to represent each of his subjects; these constitute his special committee. The representative of the

major subject acts as chairman of the special committee. The candidate then files with the Dean of the Graduate School a statement of his major and minor subjects approved by the members of his special committee. This statement must be filed within two weeks after admission to candidacy for a degree. The candidate then and from time to time thereafter confers with his special committee, and with their help outlines a program of work which meets the requirements for the degree he expects to earn.

The requirements for a graduate degree consist of four parts: (1) a minimum period of residence; (2) completion of such courses and other work as may be specified by the student's special committee; (3) achievement in independent investigation, supported by a thesis acceptable to the student's special committee; (4) competence in scholarship tested by a final comprehensive examination. For the degree of Master of Science in Education and under some circumstances for other Master's degrees, other requirements may be substituted for the thesis. For the Doctor's degree a reading knowledge of French and German, tested by a special examination, is also required.

It is to be noted that the requirements for a graduate degree do not consist primarily of a prescribed number of courses or of a fixed period of residence, but of actual achievement in scholarship and research in the fields of the major and minor subjects. Consequently only advanced work in each subject or field will be acceptable to the special committees. It may occasionally be desirable for a graduate student to take a course of an elementary character, and this is permitted with the approval of his special committee; but such courses are not considered to be part of a graduate program.

The minimum residence requirement for a Master's degree is two semesters of residence at Cornell University. This minimum requirement may be satisfied by four summer sessions of six weeks, or one semester and two summer sessions of six weeks, at Cornell University. Candidates for this degree who are in residence during summer sessions only are also required to continue their studies during the year under the direction of the chairman of the special committee in charge of their work.

The residence requirement for the Doctor's degree may, upon recommendation of the student's special committee, be fulfilled in part by attendance during the Summer Session. For this purpose, two summer sessions will be regarded as the equivalent of one semester, and four summer sessions as the equivalent of one year. However, no more than two semesters of residence credit toward the Doctor's degree may be earned by Summer Session work at Cornell or elsewhere. The last year of required residence must be spent in study during regular sessions at Cornell University.

To obtain residence credit in the Graduate School for Summer Session work the student must register both in the Summer Session and in the Graduate School; and such registration should be completed

not later than the third day of the session—in the session of 1936, not later than July 9.

A student planning to apply for admission to the Graduate School as a candidate for a degree should write at once to the Dean of the Graduate School for the blanks required for applications for admission: these applications should be filed not later than June 25. After admission to candidacy for a degree, the student may write in advance of the opening of the Summer Session to the professors whose courses he plans to take. In this way it is possible to secure advice with regard to major and minor subjects, and information about course requirements in specific fields, and to avoid delay and interruption of work at the opening of the session.

#### CANDIDATES IN THE GRADUATE SCHOOL OF EDUCATION

The Graduate School of Education in its administration of graduate work functions as a division of the Graduate School of the University, with the same requirements for admission save as to foreign languages. Work for the degree of Master of Science in Education, which is offered in this School, is conducted in the way described above for other Master's degrees, but by a special committee of three members. This degree is designed for school executives and teachers who do not wish to enter upon the more restricted program of study involving extensive research, or who wish to supplement previous training to meet advanced professional requirements for certification. For further information about the requirements for this degree, address the Director of the Graduate School of Education, Stone Hall, Cornell University, Ithaca, N. Y.

#### WORK UNDER PERSONAL DIRECTION IN THE GRADUATE SCHOOL

A candidate for the Doctor's degree who has completed a year of acceptable work in the Graduate School of Cornell University or in another graduate school, may with the approval of his special committee carry on work during the summer under the personal direction of the Faculty of the Graduate School. If residence credit is to be earned, tuition and administration fees must be paid; if no residence or other credit is to be earned, an administration fee of \$6.25 is charged.

The privilege of taking work under personal direction during the summer without the payment of tuition is restricted to candidates for a degree in Cornell University.

#### NON-CANDIDATES

A student admitted to the Graduate School as a non-candidate selects one or more advisers to direct his work. He then files with the Dean of the Graduate School not later than two weeks after registration in each term a statement of the studies he plans to pursue, with the approval of his advisers and of the members of the Graduate Faculty under whom the work is done.



## RESIDENT DOCTORS

Persons who hold a Doctor's degree or have equivalent standing may, subject to permission from the Dean of the Graduate School, register as resident doctors to carry on advanced work in their special fields of study. Upon recommendation of the Dean of the Graduate School resident doctors are exempt from the payment of tuition and all other fees except laboratory fees.

## FEES

All fees are due and payable at the Treasurer's office in Morrill Hall on registration day, July 6. The last day for payment of fees without penalty is July 10.

## TUITION FEES

The tuition fee for the Summer Session is \$50. Students who were registered as candidates for a degree in the Graduate School prior to April 1, 1935 will pay \$30 and an administration fee of \$6.25. This is the only exception to the uniform tuition fee of \$50 for the session of six weeks.

Students taking unit courses for less than six weeks will pay tuition at the rate of \$10 a week. If unit courses extending through six weeks are taken, the tuition fee will be \$50.

For private instruction in organ, piano or violin, a special fee of \$2 a lesson of thirty minutes is charged. For individual instruction in tennis or swimming, a special fee of \$10 is charged.

## TUITION FEE FOR WORK UNDER PERSONAL DIRECTION

Graduate students registered under personal direction during the summer who desire residence credit for their work must pay tuition for the credit desired pro rata at the rate of \$75 a term. In order to be admitted to Summer Session classes, a graduate student registered under personal direction must pay a minimum tuition fee of \$30 if he was admitted to candidacy for a degree prior to April 1, 1935. If admitted to candidacy for a degree after that date, the minimum tuition fee to secure admission to Summer Session classes will be \$50.

## ADMINISTRATION FEE

This fee of \$6.25 is paid by two groups of graduate students in the Summer Session and by no others. These are: (1) students registered as candidates for a degree in the Graduate School prior to April 1, 1935, carrying on regular work in the Summer Session, and paying a tuition fee of \$30; (2) graduate students registered under personal direction in the summer, either for credit or without credit.

## MATRICULATION FEE

A matriculation fee of \$10 and an examination book fee of \$1 are charged if the student is registering for the first time in the Graduate

School of Cornell University, unless the student, as an undergraduate in Cornell University, has already paid these fees. A student registering in the Summer Session but not in the Graduate School does not pay these fees unless he is at the same time registering for the first time as a candidate for a degree from one of the other Schools or Colleges of the University. For further information about these fees, the General Information Number, which may be obtained from the Secretary of the University upon request, should be consulted.

#### WILLARD STRAIGHT HALL FEE

Willard Straight Hall is the social center of the University. It contains the University theatre, reading rooms and lounges for men and women, dining rooms and a cafeteria, game rooms, etc. The fee of \$3 charged for its privileges is paid by all Summer Session students. Students registered for unit courses only and in attendance for three weeks or less pay a fee of \$1.50.

#### OTHER FEES AND DEPOSITS

Registration of motor vehicles to be driven in and about Ithaca by Summer Session students is required. The fee for this registration is \$.50.

A fee of \$1.50 is charged to those students who receive from the Committee on Traffic Control the privilege of parking motor vehicles on the campus.

A deposit of \$5, refundable when all books have been returned, is required for the withdrawal of books from the University library.

Laboratory, shop, field-trip and incidental fees are charged for materials used and for other expenses in certain courses. The amounts of these fees are specified in the descriptions of the courses in which they are charged.

Deposits refundable upon return of apparatus, etc., are required in certain courses. The amounts of these deposits are specified in the descriptions of the courses in which they are charged.

Fees are charged for the use of pianos in the Music building and the organ in Sage Chapel for practice. For the amounts of these fees, see under the descriptions of courses in music.

A fee of \$.10 per period is charged for the use of the University tennis courts and of the University swimming pool in Beebe Lake, adjacent to the campus.

#### OTHER REGULATIONS CONCERNING FEES

If a student withdraws from the Summer Session, the Treasurer may refund a part of the tuition fee or cancel a part of the obligation that the student has incurred for tuition, provided the reason for the withdrawal be stated in writing and be satisfactory to the Comptroller and the Registrar. In such a case the student is required to pay twenty per cent of the term's tuition for each week or fraction

of a week between the first registration day and the date of his certificate of withdrawal **unless the withdrawal is made before noon on Wednesday, July 8.**

Students registering at any time during the last five weeks of the Summer Session are required to pay for the remainder of the term at the rate of twenty per cent of the term's tuition for each week or fraction of a week between the date of registration and the last examination day of the term.

Any student who fails to pay his tuition charges, other fees, and other indebtedness to the University, or who if entitled to free tuition, fails to claim it at the Treasurer's office and to pay his fees and other indebtedness, within the prescribed period of grace, is thereby dropped from the University unless the Treasurer has granted him an extension of time to complete payment. The Treasurer is permitted to grant such an extension, when in his judgment the circumstances of a particular case warrant his doing so. For any such extension the student is assessed a fee of \$5 for the first week and \$2 additional for each subsequent week in which the whole or any part of the debt remains unpaid, but the assessment in any case is not more than \$15. The assessment may be waived in any instance for reasons satisfactory to the Comptroller and the Registrar, when such reasons are set forth in a written statement.

Any tuition fee or other fee may be changed by the Trustees to take effect at any time without previous notice.

## SPECIAL REGULATIONS

### CONDUCT AND SCHOLARSHIP

The Summer Session is conducted under the general regulations governing conduct and scholarship which apply to all sessions of the University. Students are requested to familiarize themselves with dormitory and other rules and to abide by them.

The University rules governing student conduct are:

"A student is expected to show both within and without the University unflinching respect for order, morality, personal honor, and the rights of others. The authority to administer this rule and to impose penalties for its violation is vested in the University Committee on Student Conduct. The rule is construed as applicable at all times, in all places, to all students of the University."

"A student may at any time be removed from the University if, in the opinion of the Committee on Student Conduct, his presence is not conducive to the University's best interests."

The officers of the University also reserve the right to cancel the registration of any student at any time for neglect of scholastic duties.

### AUTOMOBILE REGISTRATION AND PARKING

Because of local traffic and parking conditions it is necessary to require registration of both motor vehicles and their drivers during

the Summer Session, as well as during the academic year. Each student who maintains or operates a motor vehicle in or about Ithaca during the Summer Session must register with the Committee on Traffic Control at the time of registration for courses. He will at the same time register the motor vehicle which he proposes to drive. The joint fee for these registrations is \$.50.

Because of limited parking facilities, it is necessary to restrict the privilege of parking motor vehicles on the campus to those students who apply for and receive special permits. These permits are issued by the Committee on Traffic Control to those students whose need for them is greatest, and application for them should be made at the time of registration. The fee for a parking permit is \$1.50.

#### THE CASHING OF CHECKS

The Treasurer of the University accepts checks in settlement of charges payable at his office, but a rule of the Board of Trustees forbids him to cash any credit instrument, even to the extent of accepting a check or draft in amount greater than the sum due and returning the excess in cash. Students are therefore advised to open an account in an Ithaca bank as soon as they arrive in town, or else provide themselves with travelers' checks, drafts on New York City banks, money orders, or other form of credit instrument such as a bank will cash in the ordinary course of business.

### RESIDENTIAL HALLS: ROOMS: BOARD

#### FOR WOMEN

The University has two groups of residential halls for women in which board and room can be obtained during the Summer Session by registered students only. They are:

*Sage College*, which accommodates 175 persons. Here the charge for room and a specified amount of laundry, for the session, is from \$24 to \$39, according to the size and location of the room. The dining room will not be open. Board may be obtained at Willard Straight Hall, across the green from Sage College, or at the cafeteria in the Martha Van Rensselaer Hall.

*Balch Hall*, which accommodates 318 persons. Here the charge for room, board, and a specified amount of laundry, for the session, is from \$80 to \$95, according to the size and location of the room.

Besides these halls there are, off the campus, certain *approved houses*, which are privately owned and occupied, which are under the general supervision of the Dean of Women, and in which women students exclusively are accommodated. The list of approved houses will be available after June 1 on application to the Manager of Residential Halls.

Undergraduate women students of Cornell and other colleges and other women students under twenty-one years of age are expected to live in the residential halls or the approved houses. Any woman student should consult the Dean of Women before engaging a room.

In the residential halls for women the charge for room and board includes dinner and lodging Saturday night, July 4 (not earlier), and all meals to and including breakfast Saturday, August 15.

Members of the Summer Session who lodge outside Balch Hall may obtain table board at that hall for \$9 a week (or \$48 for the six weeks of the session).

The Head Residents in charge of the halls are glad to know the students, to advise them in illness or other emergency, and to give them whatever information they wish about the University or the town. It is understood that persons living in the halls will conform to the house regulations made for the convenience and comfort of all.

#### ROOMS FOR MEN

Men regularly enrolled in the Summer Session can obtain comfortable rooms in the Residential Halls for Men, which are thoroughly modern and of fireproof construction.

In the *Residential Halls* the charge for furnished room, including care of the room and laundry of bed linen, is from \$18 to \$30 for the session. There are a few suites at a higher rate, and a few rooms on the top floor may be had for less.

A list of private houses offering desirable rooms for men for the session can be obtained after June 1 by application to the Manager of Residential Halls, Morrill Hall, Ithaca, N. Y.

#### APPLICATIONS FOR ROOMS

Applications for rooms in any of the Residential Halls, either for women or for men, and for rooms in the approved houses for women, should be made to the *Manager of Residential Halls, Morrill Hall, Ithaca, N. Y.*

Floor plans of the Residential Halls and other information about the rooms may be obtained, before making applications, by addressing the Manager. The same office will also furnish, after June 1, lists of rooms for women in private houses, similar lists of rooms for men, and information about private houses and apartments for rent.

#### DEPOSITS WITH APPLICATIONS

A *deposit of five dollars* must accompany each application for a room in any of the residential halls; otherwise the application will not be entertained. The rooms are reserved in the order of application. If a room assigned is occupied by the applicant, the amount of the deposit is held until the end of the session to cover the return of keys and any damage to building or furniture other than ordinary wear and tear, and to insure the completion of the lease. The deposit will be refunded if the applicant gives formal notice to the Manager on or before June 15 that the applicant wishes to withdraw the application.

Checks should be drawn to the order of Cornell University.

## BOARD, DINING ROOMS, CAFETERIAS

Women who are members of the Summer Session and who reside outside Balch Hall may obtain table board at that hall for \$9 per week or \$48 for the six weeks of the session. The dining rooms and cafeteria of Willard Straight Hall and the cafeteria in Martha Van Rensselaer Hall are open to both men and women students. Board may be obtained at these places and at cafeterias, dining rooms and restaurants near the campus at \$1.00 to \$1.25 per day.

## THE COST OF LIVING

An estimate of the cost of living in Ithaca in the summer can be made by consulting the figures given above. In a private house rentals vary according to the location. Rooms are rented with the understanding that they will be occupied for the entire session unless both parties agree otherwise. Table board is generally engaged by the week.

## MEANS OF SELF-SUPPORT

Men who wish to earn part of their expenses during the Summer Session are invited to correspond in advance with the Director of the Employment Agency of the Cornell United Religious Work, *Mrs. L. A. Fuertes, Barnes Hall, Ithaca, N. Y.* Opportunities of this kind for women students are limited, but information about such opportunities may be obtained by addressing *Miss R. L. Fitch, Dean of Women, Cornell University, Ithaca, N. Y.*

## STUDENT HEALTH SERVICE

A health service is provided for students of the Summer Session as well as for those of the regular academic year. Students may consult the physicians of this service in regard to all matters that concern their health.

Those indisposed but still able to attend classes should consult the medical advisers immediately in order that advice may be given and that diagnosis of incipient diseases may be made promptly. For the protection of the University community, it is required that contagious and infectious diseases shall be reported immediately to the medical adviser.

A medical examination is not required of students in the Summer Session, but upon request such routine physical examination will be made for the certification of teachers and for other special purposes.

When the condition of a student's health is such that in the opinion of the University authorities it is unwise for him to remain in the University he may be requested to withdraw.

Summer Session students are not required to offer a vaccination certificate at registration time unless they are also matriculating in one of the Schools or Colleges of the University. Students entering the Graduate School for the first time matriculate when they register in that School and must present a satisfactory certificate of vaccination.

The Health Service staff for the Summer Session includes men and women physicians with nursing, laboratory, and clerical assistants. The offices of the Medical Advisers are in the Old Armory opposite Myron Taylor Hall; the office of the Medical Adviser of Women in Sage College is closed during the Summer Session. The medical advisers will keep the following office hours during the Summer Session: Dr. W. H. York, medical adviser of men, *daily except Sunday, 9 a.m. to 12 m.*; Dr. Jennette Evans, medical adviser of women, *daily except Sunday, 10 a.m. to 1 p.m.*; Miss Edna Carter, registered nurse, *daily except Sunday, 9 a.m. to 1 p.m. and 2 p.m. to 4 p.m.*

On Sundays the medical adviser's office will be open for one hour only, *10 a.m. to 11 a.m.*, and only one of the doctors will be on duty.

No charge is made for the services of the medical advisers or of the nurse.

#### THE UNIVERSITY INFIRMARY

The University Infirmary will not be open during the Summer Session. Students requiring hospital care will be admitted to the Tompkins County Memorial Hospital under the usual regulations of that hospital.

#### WILLARD STRAIGHT HALL

Willard Straight Hall is the social center of the University. It contains the University theatre, reading rooms, and lounges for men and women, dining rooms and a cafeteria, game rooms, etc. In accordance with regular procedure, a fee of \$3 is required of all summer registrants, payable at the same time as other fees.

#### THE LIBRARIES

The University Library is open on week days from 7:50 A.M. to 10:30 P.M. In this building are the main library, containing about 500,000 volumes, and most of the seminary and special libraries. The main reading room affords accommodations for more than two hundred readers, and contains a selected library of about 8,000 volumes of reference works. Below stairs is the periodical room in which are kept the current numbers of about 500 journals in various fields of knowledge. These rooms are open to all students. Students properly qualified are allowed the use of the seminary rooms and the books in them. The main collection is primarily a library of reference for use in the building. Students are, however, to a limited extent, allowed to take out books for home use. Persons wishing this privilege must make a deposit of \$5, which will be refunded upon the return of all books taken out.

The Library of the College of Agriculture, in the basement of Stone Hall, is open on week days from 9 A.M. till 5 P.M., except Saturday when it is closed at 1 P.M. In it will be found a large collection of bulletins and reports of experiment stations, reference books on agriculture and country life, agricultural periodicals, and the like. The

entomological library in Comstock Hall is one of the most complete of its kind in the United States. Nearly all of the departments in which instruction is given have well-selected departmental libraries.

A large library of phonograph and piano recordings, and musical scores to parallel these recordings, is available in the Music Building for the use of the general student body. This library may be used in the Music Building only, during the hours 9 A.M. to 5 P.M. and 7 P.M. to 10 P.M. daily except Sunday, and on Sunday afternoons from 2:30 P.M. to 5:30 P.M.

### CONCERTS

Organ recitals will be given on the first, third, and fifth Sunday evenings of the session in Bailey Hall or in Sage Chapel (as announced in the Summer Session Calendar) by Luther M. Noss, University Organist and Assistant Professor of Music. A series of concerts will be given on Thursday evenings at 8:15 P.M. in Bailey Hall under the auspices of the Department of Music; details will be announced in the Summer Session Calendar. Both the organ recitals and the Thursday evening concerts are free to all students.

### THE SUMMER THEATRE

During the Summer Session weekly performances are given by the Summer Theatre Company on Saturday evenings, beginning July 11. The performances are given in the theatre of Willard Straight Hall; an admission charge is made. The plays to be produced will be announced each week in the Summer Session Calendar.

The plays of the Summer Theatre Company are directed by Professors Drummond and Stainton, assisted by other members of the Company. Members of the courses in Dramatic Production may compete for places in the casts and production staffs. In order to do this they are required to register in the regular courses in Dramatic Production at registration time.

Museum of Modern Art Films selected from *Early American Films*, and from *Memorable American Films*, will be presented weekly by the Summer Theatre to subscription audiences. Tickets for the series will be on sale at Willard Straight Hall.

### SAGE CHAPEL

Religious services are conducted in Sage Chapel throughout the academic year by clergymen of various religious denominations. There will be services in the Chapel on five Sundays during the Summer Session, July 12 to August 9 inclusive.

### LECTURES

In addition to the regular classroom work there will be general public lectures on Monday evenings, and also lectures of general interest each Wednesday evening in connection with the work of various departments. They will be announced in the Summer Session Calendar.



## SYMPOSIUM ON NUCLEAR PHYSICS

Under the auspices of the Department of Physics, a three-day program devoted to a discussion of certain phases of nuclear physics has been arranged for the week-end immediately before the Summer Session opens.

This symposium is planned to provide a comprehensive survey of this field, with ample opportunities for discussion. The speakers will include specialists from various university and other research laboratories. One of the principal papers will be given by Dr. F. Rasetti, Professor of Physics at the University of Rome and one of the leading investigators in this rapidly developing field, who will also continue in residence throughout the Summer Session as visiting lecturer in Physics.

The dates for this symposium are July 2, 3, and 4. Arrangements will be made for housing the group in attendance, including families, at a moderate rate in one of the University dormitories for the nights of July 1, 2, and 3. Reservations for such rooms should be made in advance with the Manager of Residential Halls, Morrill Hall, Ithaca, N. Y. There will be a registration fee of one dollar for those attending these meetings. For further information, address Professor R. C. Gibbs, Rockefeller Hall, Ithaca, N. Y.

## DEMONSTRATIONS AT THE OBSERVATORY

A series of demonstration lectures, illustrated by observations with the 12-inch telescope when the weather permits, will be given on Monday, Wednesday and Friday evenings throughout the session at the Fuertes Observatory. During the first week of the session these lectures will be open to all registered students; admission after the first week will be by tickets which may be obtained without charge at the Summer Session office.

## EXCURSIONS

Excursions in connection with the work of certain departments are made to many points of interest. Some of them are open to all members of the Summer Session. Especially noteworthy are the excursions conducted by the Department of Geography and Geology to Taughannock Falls, to Watkins Glen, and to Niagara Falls. Details of the plans for these are given on page 54.

Certain field trips conducted by members of the Department of Botany are open to interested persons upon application. Further information may be obtained at the Summer Session office.

## THE SUMMER SESSION CALENDAR

A weekly calendar is issued on each Saturday of the Summer Session. This carries all official notices and gives details of all public events, such as concerts, lectures, excursions, etc. Copies are posted

on all bulletin boards and students are advised to consult them for further information about such events.

### ROUTES TO ITHACA

Ithaca can be reached from New York City by either the Delaware, Lackawanna & Western Railroad or the Lehigh Valley Railroad. On both roads there are good trains carrying Pullman cars, on the Lackawanna by day, on the Lehigh Valley by day and by night. Passengers from the west reach Ithaca by way of the Lehigh Valley Railroad from Buffalo. From stations on the Boston & Albany Railroad, the shortest route to Ithaca is by way of Syracuse and Auburn. From Philadelphia, and from Baltimore, Washington, and the south by way of the Baltimore & Ohio, the Philadelphia & Reading connects with the Lehigh Valley at Bethlehem. From stations on the Erie, connections with Ithaca can be made either by the Lackawanna at Owego or by the Lehigh Valley (Elmira and Cortland branch) at Elmira. Ithaca has connections with the New York Central at Geneva, Auburn, and Canastota.

Several of the more important bus lines either run through Ithaca or connect at nearby towns with lines into Ithaca. Further information about routes can best be secured at local bus terminals.

### REDUCED RATES BY RAIL

Students coming by rail from points east of and including Chicago and St. Louis, including eastern Canada, New England, and the Southeastern states, and from some areas west of Chicago and St. Louis, may secure a special round-trip rate of a fare and a third. All prospective students planning to come by rail are advised to inquire of their local ticket agents about these reduced rates before purchasing tickets. Tickets at this rate will be on sale from July 2 to 7 inclusive, and the return limit will be August 21.

**In order to avail themselves of reduced rates students must secure in advance proper certificates of identification, which may be had on application to the Director of the Summer Session, Cornell University, Ithaca, N. Y.**

# COURSES OF INSTRUCTION

## ARRANGEMENT OF SUBJECTS

Subjects of instruction are grouped into eleven divisions as given in the Table of Contents on page 3.

In each division subjects of instruction are arranged alphabetically.

The index at the end of this Announcement includes all subjects of instruction; it should be referred to for subjects not readily found by reference to the Table of Contents.

## CLASS SCHEDULES

In most courses of instruction, classes will meet five times a week, on each week day except Saturday. Such classes will meet on July 11, the first Saturday of the Session, but on no other Saturdays. Class periods begin on the hour unless otherwise indicated and are fifty minutes in length. Laboratory periods are of various lengths, as indicated in the description of courses which include laboratory work. The meeting place of each course is given in the description of the course. Goldwin Smith Hall is indicated by the symbol GS: all other buildings are named.

## DRAWING, PAINTING, AND MUSIC

### DRAWING: PAINTING: MODELING

The following courses correspond generally to those of the regular session of the University. The instruction throughout is on a personal basis and is adapted to the particular needs of the students. All materials needed may be obtained in Ithaca.

**S 1. Elementary Drawing.** Credit two hours. Daily except Sat., 8-10. *Third floor, Franklin.* Assistant Professor WASHBURN.

This course for beginners in drawing embraces freehand perspective, drawing of geometrical objects and simple casts. The course will begin with pencil work and continue with light and shade in charcoal.

**S 2. Antique.** Credit two hours. Daily except Sat., 8-10. *Third floor, Franklin.* Assistant Professor WASHBURN.

Prerequisite for this course is a knowledge of the elements of drawing. Instruction will be given in charcoal from casts.

**S 3. Drawing from the Human Figure.** Credit two hours. Daily except Sat., 10-12. *Third floor, Franklin.* Assistant Professor WASHBURN.

Study from living model in charcoal. Courses S1 and S4 or their equivalent are prerequisite to this course. A studio fee of \$10 is charged.

**S 4. Elementary Color.** Credit two hours. Daily except Sat., 8-10. *Third floor, Franklin.* Mr. BROUGHT.

Instruction for beginners in color. Students work from simple groups. Talks will be given on the theory of color.

**S 5. Advanced Color.** Credit two hours. Daily except Sat., 8-10. *Third floor, Franklin.* Mr. BROUGHT.

As in elements of color, students in advanced color work from groups (vases, fruit, flowers) in oil or in water color. Those who have not had elements of color may enter this course on submission of examples of original work. Copies of others' work will not be sufficient for entrance.

**S 6. Outdoor Sketching in Color.** Credit two hours. Daily except Sat., 2-4. *Third floor, Franklin.* Mr. BROUGHT.

A knowledge of the elements of drawing and the elements of color is a prerequisite to this course. Instruction is given in oil from landscape.

The unusual variety and charm of the natural environment of Cornell give an abundance of subject-matter from which to work. There are woodland, open farming country, lakes and streams, broad panoramic views, and rugged gorges within easy walking distance of the campus.

**S 7. Elementary Modeling.** Credit two hours. Daily except Sat., 8-10. *Third floor, Franklin.* Assistant Professor WASHBURN.

The work consists of the study of modeling of architectural ornament, the human figure, and portrait, using plaster casts. Advanced students may do original compositions.

## MUSIC

**S 1. Theory and Practice of Music.** Credit two hours. Daily except Sat., 9. Open to all students who have had little or no training in music. Students offering music for entrance credit may not take this course for credit. *Music Building, 320 Wait Avenue.* Assistant Professor NOSS.

An elementary course in the theory of music, including notation and terminology, scale, interval, and chord structure, melody writing, ear training, sight singing, and the elements of musical design.

**S 5b. The Art of Music.** Credit two hours. Daily except Sat., 10. Open to sophomores and upperclassmen. *Music Building, 320 Wait Avenue.* Professor WEAVER.

An approach to the rational understanding and enjoyment of the art of music. Music S 5a is not prerequisite.

**S 10b. History of Music.** Credit two hours. Daily except Sat., 12. Open to upperclassmen and graduates, and to underclassmen by permission. *Music Building, 320 Wait Avenue.* Professor WEAVER.

A survey of the evolution of the art of music, with particular reference to questions of style and to the place of music in the artistic and social life of nations. This part of the course covers the period from Bach and Handel through Wagner and Brahms. Music S 10a is not prerequisite.

**S 10c. History of Music.** Credit two hours. Daily except Sat., 2. Open to upperclassmen and graduates, and to underclassmen by permission. *Music Building, 320 Wait Avenue.* Mr. HILL.

A continuation of Music S 10b. This course covers the period from Wagner and Brahms on, with special consideration of present tendencies and idioms. Music S 10a and S 10b are not prerequisite for this course.

**S 12a. Historical Survey of Piano Music.** Credit two hours. Daily except Sat., 11. Open to upperclassmen and graduates and to underclassmen by permission. *Music Building, 320 Wait Avenue.* Assistant Professor HAIGH.

An illustrated course giving a survey of piano music. Technical proficiency on the piano is not required. This part of the course deals with piano music from its beginnings through the classic period.

**S 20a. Harmony.** Credit two hours. Daily except Sat., 8. Prerequisite, Music 1 or its equivalent. *Music Building, 320 Wait Avenue.* Mr. KIRSCHBAUM.

A course dealing with the construction and interconnection of triads and chords of the 7th and their inversions, and with the harmonizing of both bass and soprano melodies.

**S 60 and S 61. Applied Music.** Individual instruction in organ, piano and violin. Credit two hours for students majoring in music; for other students, no credit. Hours to be arranged. *Music Building, 320 Wait Avenue.* Assistant Professors HAIGH and NOSS, and Mr. KIRSCHBAUM.

Individual instruction in applied music is offered primarily for students wishing to major in music, and in the case of such students the work of the course is correlated with the theoretical courses being pursued by the student. Whenever the facilities of the department permit (1) other students and, during this session, (2) non-students, may register for this instruction. In each case, permission to register should be obtained from Professor WEAVER. In the case of students majoring in music, four terms of instruction are available, and the individual student is assigned to the course number for which his previous training qualifies him.

Individual instruction is offered in organ under Assistant Professor NOSS, in piano under Assistant Professor HAIGH, and in violin under Mr. KIRSCHBAUM. The normal registration involves two half-hour lessons a week at a special fee of

\$2 a period. Practice facilities are available for each instrument; the fee for a daily hour for the term is \$3 in the case of a piano practice room in the Music Building, and \$11 in the case of the organ in the Sage Chapel. After obtaining permission to register for this instruction, students should consult the instructor about lesson hours and the secretary of the department about practice hours.

## LANGUAGES AND LITERATURES, PUBLIC SPEAKING AND DRAMA

### COMPARATIVE STUDY OF LITERATURE

**S 1. Classical Drama in English Translation.** Credit two hours. Daily except Sat., 10. GS 120. Assistant Professor HUTTON.

An examination of certain Greek Tragedies and Greek and Roman Comedies, with special attention to dramatic structure.

### ENGLISH

Courses S 1 and S 2 taken together will be accepted as the equivalent of either the first term or the second term of English 1 or of English 3 in the regular University session, but not of both.

**S 1. Composition.** Credit two hours. Daily except Sat., 8. GS 124. Mr. BALDWIN.

A study of the elementary principles of composition, intended to teach the habit of clear and correct expression; reading of models, frequent writing of themes, class discussions; personal conferences at hours to be appointed.

**S 2. Introductory Course in Literature.** Credit two hours. Daily except Sat., 9. GS 124. Mr. BALDWIN.

A study of selections from Shakespeare, Milton, and writers of lyric poetry, intended to acquaint the student with works of the masters of English literature.

**S 4. Advanced Composition.** Credit two hours. Daily except Sat., 9. GS 164. Dr. HARRIS.

The planning, writing, and criticism of essays and of other exercises in composition, accompanied by a study of general principles of writing and of questions of English usage. Open only to students who have had one year of college English and to teachers.

**S 5. Teachers' Course.** Credit two hours. Daily except Sat., 10. GS 160. Professor NORTHUP.

Lectures, readings, reports, and discussions. Designed for those who are teaching or who expect to teach English in schools. The organization of the high school course in English; the teaching of literature in general; supplementary reading for pupils and teacher; the use of the school library and the public library; stage productions; the place of language and grammar in the high school; problems of oral and written composition; the relation of composition to literature and to other subjects in the curriculum.

**S 6. Pope and Swift.** Credit two hours. Daily except Sat., 12. GS 156. Dr. HARRIS.

Intellectual and social aspects of the age of Queen Anne as reflected in the poetry of Pope and the prose of Swift. Texts: Sherburn, *Selections from Pope*; Oxford edition of Swift's *Gulliver's Travels*, etc., and *Satires* and *Personal Writings*.

**S 7. Nineteenth Century Poetry.** Credit two hours. Daily except Sat., 9. GS 162. Professor MONROE.

A study and discussion of the most important poems of Byron, Shelley, and Keats. Texts: Oxford Byron, Modern Library Keats and Shelley.

**S 8. Modern American Poetry.** Credit two hours. Daily except Sat., 10. GS 142. Professor THOMPSON.

The leading poets from Emily Dickinson to the present. Text: Untermeyer, *Modern American Poetry*.

**S 11. American Literature to the Civil War.** Credit two hours. Daily except Sat., 8. GS 156. Professor THOMPSON.

A study of literary, social, and political ideals of America as reflected in the writings of Irving, Bryant, Cooper, Poe, Emerson, Thoreau, Hawthorne, Melville, Longfellow, Whittier, Holmes, and Lowell. Text: Quinn, Baugh, and Howe, *The Literature of America*, vol. 1.

**S 12. English Prose in the Nineteenth Century.** Credit two hours. Daily except Sat., 11. GS 164. Acting Associate Professor QUINTANA.

Study of the development of prose in the nineteenth century as it may be seen in the characteristic works of such writers as Lamb, Hazlitt, Landor, Newman, Carlyle, Ruskin, and Pater.

**S 14. Milton.** Credit two hours. Daily except Sat., 12. GS 164. Acting Associate Professor QUINTANA.

A study of the poetry of Milton, with some attention to the more important prose works. Text: Patterson, *The Student's Milton*.

**S 16. The English Language.** Credit two hours. Daily except Sat., 10. GS 162. Professor MONROE.

A study of some significant features in the growth and development of the mother tongue: language and grammar in general; some misconceptions about the life of language; the relationships of English; phonetics; the English vocabulary; inflections; native resources and foreign influences; disputed usages; the bearing of historical grammar on present forms and usages, spoken and written.

Recitations, lectures, collateral reading. The course does not require previous knowledge of Old or Middle English.

**S 17. Modern Drama.** Credit two hours. Daily except Sat., 9. GS 156. Professor STRUNK.

A study of plays of recent and contemporary dramatists. Texts: Watson and Pressey, *European Plays*, vol. i, and *English and Irish Plays*, vol. ii; Montrose J. Moses, *Dramas of Modernism*.

**S 18. Classical Drama.** Credit two hours. Daily except Sat., 11. GS 160. Professor STRUNK.

A survey of the drama from its origins to modern times, with examples chiefly from the drama of Greece and France (in translation) and Elizabethan and Restoration England. Texts: Aeschylus, Sophocles, and Euripides vol. ii in *Everyman's Library*. The University Library will supply sufficient texts for other plays read.

**S 20. Shakespeare.** Credit two hours. Daily except Sat., 11. GS 156. Assistant Professor NUNGEZER.

A study of representative Shakespearean tragedies, with supplementary readings in Elizabethan drama. Designed especially for teachers of Shakespeare. Supplementary reading for those who wish a general knowledge of the Shakespearean age.

**Classical Drama in English Translation.** See under the department of Comparative Study of Literature.

#### COURSES EXCLUSIVELY FOR GRADUATES

**S 30. Theories of Poetry.** Credit two hours. For graduates only. M W Th, 2:30-3:30. GS 183. Professor NORTHUP.

Lectures, readings, reports, and discussions of the nature of poetry and the valid bases of poetical criticism.

**S 31. Dramatic Literature.** Credit two hours. For graduates who are also taking S 18. First meeting, T, 2:30, GS 160; subsequent hours to be arranged. Professor STRUNK.

Collateral reading and preparation of papers on topics arising from the work of S 18.

**S 38. Elizabethan Literature.** Credit two hours. For graduates only. Daily except Sat., 12. GS 160. Assistant Professor NUNGEZER.

Studies in the non-dramatic literature of the sixteenth century: Spenser, Daniel, Drayton, Shakespeare, Bacon, Burton.

## FRENCH

**S 1. Elementary Course.** Credit four hours. Daily except Sat., 8 and 12. *GS 290.* Mr. COLMAN. Entrance credit, one unit.

The object of this course is twofold: first, to give beginners a thorough drill in the essentials of French pronunciation, grammar, and reading; second, to offer to teachers an opportunity of studying the methods of presentation of these subjects to beginners.

**S 3. Intermediate Course.** Credit four hours. Daily except Sat., 8 and 12. *GS 281.* Mr. RIDEOUT.

Entrance credit, one unit. Prerequisite, course S 1 or its equivalent.

**S 4. Advanced Translation.** Credit two hours. Daily except Sat., 9. *GS 281.* Prerequisite, course S 3 or its equivalent. Mr. KETCHAM.

**S 5. Intermediate Composition and Conversation.** Credit two hours. Daily except Sat., 11. *GS 277.* Prerequisite, course S 3 or its equivalent. Mr. COLMAN.

**S 9. Advanced Composition and Conversation.** Credit two hours. Daily except Sat., 10. *GS 283.* Mr. RIDEOUT.

Rapid translation from standard English texts into French; frequent theme-writing. This course is conducted in French.

**S 28. Contemporary French Literature.** Credit two hours. Daily except Sat., 11. *GS 290.* Professor MASON.

**S 30. Methods of Teaching French.** Credit two hours. Daily except Sat., 8. *GS 283.* Professor MASON and Mr. RIDEOUT.

Lectures and practical exercises on the following subjects: new-type tests, prognostic tests, achievement tests, silent reading, free composition, etc. For those desiring to prepare for the written examination for the approval of oral credit of the New York State Department of Education there will be special exercises and individual conferences.

**S 31. Phonetics.** Credit two hours. Daily except Sat., 9. *GS 277.* Mr. RIDEOUT.

**S 47. French Seminary.** Credit two hours. Daily except Sat., 9. *French Seminary Room, Library.* Professor MASON.

Discussion of special topics in the field of modern French literature. This course is especially for graduate students and candidates for the degree of Master of Arts.

**Lectures.** A series of lectures in French dealing with French national life will be given by the members of the instructing staff on Wednesday evenings at 8 o'clock in *Goldwin Smith Hall*, Room 290.

**French Conversation.** In *Balch Hall* special tables are arranged under competent supervision for conversation in French.

## GERMAN

**S 1. First Year German.** Credit four hours. Daily except Sat., 8 and 12. *GS 183.* Professor ANDREWS. Entrance credit, one unit.

Grammar, composition, reading, oral training. After successfully completing this course, students can, by supplementary reading during the summer, prepare themselves for the College Board entrance examination in second year German.

**S 3. Third Year German.** Credit four hours. Daily except Sat., 8 and 12. *GS 190.* Professor FAUST. Entrance credit, one unit (third unit).

Reading, grammar, composition, oral training. Prerequisite, two years of high school German or the equivalent.

**S 8. Readings from Goethe.** Credit two hours. Daily except Sat., 9. *GS 183.* Professor ANDREWS.

A general consideration of Goethe's life and activities, with detailed study of one or more of his works. Prerequisite, reading knowledge of German.

**S 10. Contemporary German Literature.** Credit two hours. Daily except Sat., 11. *GS 190.* Professor FAUST.

Lectures in German on German literature, 1880-1930. Foreign influences; naturalism, impressionism, expressionism. Collateral reading.

**German Lectures.** Lectures or interpretative readings in German will be given by members of the department on Wednesday evenings at 8 o'clock in GS 190.

### GREEK

**S 1. Introduction to Greek and to the Reading of Homer.** Credit two hours. Daily except Sat., 11. GS 124. Professor CAPLAN.

This course is intended (a) for graduate students who have had no Greek; (b) for high-school teachers of Latin who have had no direct acquaintance with Greek and are therefore deprived of one of the chief sources of understanding and appreciating the content of the Latin authors they present in class; (c) for students of literature who desire by intensive work during a Summer Session to lay the foundation for a first-hand appreciation of the literary masterpieces of Greece. Beginning with the alphabet, the course will give a thorough grounding in necessary forms, flexions, and syntax, and will proceed to the reading of a portion of the first book of Homer's Iliad.

**S 2. Advanced Greek.** Credit two hours. Daily except Sat., 12. GS 124. Professor CAPLAN.

For students who have mastered the elements and wish to enlarge their knowledge of Greek. Readings will be chosen to suit the needs of those who enter the course.

**Classical Drama in English Translation.** See under the department of Comparative Study of Literature.

### LATIN

The work of the Summer Session in the field of Latin study is intended primarily for actual and prospective teachers of the subject in the secondary schools.

A series of advanced courses is offered for those who by their undergraduate training are qualified to enter the Graduate School or to continue their work therein as candidates for the degree Master of Arts, with Latin as a major or a minor subject.

Other courses are offered, theoretical and practical, for those high-school Latin teachers who either desire a clearer comprehension of the aims and of the technique of classical teaching in secondary schools, or require specific training in the content of their school courses.

Prospective students in the 1936 Summer Session are invited to correspond with Professor CHARLES L. DURHAM, Goldwin Smith Hall, Ithaca, N. Y., concerning the nature and the scope of the work in Latin. Those who wish to begin their candidacy for the degree Master of Arts should forward to the office of the Graduate School, on or before June 25, such credentials of undergraduate work leading to the degree of A.B. as will entitle them to admission to the Graduate School.

**S 1. The Teaching of High-School Latin.** Credit two hours. Daily except Sat., 9. GS 128. Professor DURHAM.

Primarily for those who have an acquaintance with the field, and actual or prospective experience in teaching. Lectures, discussions, conferences.

The present status of Latin in the high-school curriculum; recent professional literature in the field of Latin; standards and means of determining progress; validity of various types of test and examination; content and method in the light of new objectives; class-room equipment, materials of instruction, books for teachers and pupils.

The credit of two hours carried by this course is countable toward the group of six semester hours in General and Special Methods required by the New York State Department of Education as part of the prerequisite for the Professional Certificate for high school teaching. Similar credit in an elective group will be recognized by the State of Pennsylvania. Students from states where other requirements for teachers' certificates are in force are advised to secure in ad-



vance from their own school authorities an indication that this course will be counted towards the satisfaction of their particular professional requirements.

**S 2. History, Aim, and Scope of Latin Studies.** Credit two hours. Daily except Sat., 10. GS 128. Professor DURHAM.

Particular attention will be paid to the results of research in connection with Caesar, Cicero, and Virgil.

Primarily for graduate students, candidates for the Master's degree with Latin as the major subject.

**S 3. Theses and Informal Work.** Direction in the preparation of theses by candidates for the Master's degree, and in the investigation of special problems which arise in connection with the work of the individual teacher. Hours a week and credit by arrangement. Professor DURHAM and Assistant Professor HUTTON.

Special attention is called to the courses in **Greek**; in **Ancient History**; and in **Classical Drama in English Translation** under **Comparative Study of Literature**.

## PUBLIC SPEAKING, DRAMA AND THE THEATRE

### PUBLIC SPEAKING

The courses in Public Speaking represent the following fields: Oral Interpretation; Speech Training; and Oral English. All courses are planned to meet the special needs of teachers. Either S 28 or S 30 (not both) may be counted as a course in methods approved by the New York State Department of Education for the teachers' certificate.

Students may confer either with the departmental representative in the Drill Hall, or with the individual instructors, who will be in their offices both on registration day and on the first day of instruction. For information about advanced work in Speech Training and Phonetics, consult MR. THOMAS, GS 23; in Rhetoric and Public Speaking, MR. WAGNER, GS 237, or MR. WICHELS, GS 235.

**S 1. Public Speaking and Discussion.** Credit two hours. Daily except Sat., 11. GS 21. Assistant Professor WAGNER.

Practice in discussion and in platform speaking, on topics of current interest. Methods of preparation and delivery studied in relation to practice; selected readings on contemporary problems; conferences. Regular students passing the course are admitted to Public Speaking 2. High school teachers will find the methods applicable to their work in public speaking and oral English.

**S 2. Argument and Debate.** Credit two hours. Daily except Sat., 12. GS 234. Assistant Professor WAGNER.

Practice in the composition and delivery of argumentative speeches, and in debate; study of analysis, modes of proof, refutation, speech construction, forms of argument and discussion. Conferences. Debate coaches will find the course of aid in their work.

**S 10. Oral Interpretation of Literature.** Credit two hours. Daily except Sat., 12. GS 21. Assistant Professor THOMAS.

Training in interpretative reading, chiefly of modern poetry from Untermeyer's *Modern British and Modern American Poetry*; study of principles; constant practice; conferences for drill.

**S 14. Current Events and Public Opinion.** Credit two hours. Daily except Sat., 11. GS 234. Professor WICHELS.

Current controversies on American problems studied in the light of modern theories of public discussion, mass persuasion, and opinion control. Lectures and class discussions.

**S 21. Principles of Public Speaking.** Credit two hours. Daily except Sat., 9. GS 236. Assistant Professor WAGNER.

For graduates. Lectures and discussions. A survey: social function of speech-making; forms of public address; speech preparation; structure; style; delivery; theories of persuasion.

**S 22. Emerson in American Public Discussion.** Credit two hours. Daily except Sat., 12. GS 236. Professor WICHELS.

For graduates only. Lectures, readings, and reports. A study of Emerson's lectures and essays in relation to his audience: his art of public address and his influence.

**S 28. Teachers' Course in Oral English and Public Speaking.** Credit two hours. Daily except Sat., 9. *GS 234.* Professor WICHELNS.

Designed for secondary school teachers whose work includes oral English or public speaking. Aims and standards; organization of courses; methods and materials; conduct of speech activities. Examination of reports and syllabuses on oral English and public speaking in secondary schools. Individual conferences for special problems.

**S 30. Teachers' Course in Phonetics and Speech Training.** Credit two hours. Daily except Sat., 9. *GS 26.* Assistant Professor THOMAS.

A study of English phonetics, pronunciation and the improvement of speech; primarily for secondary and elementary school teachers.

**S 31. Advanced Phonetics and Speech Training.** Credit two hours. Daily except Sat., 10. *GS 26.* Assistant Professor THOMAS.

Principles of general phonetics; regional and historical variations; methods of improving normal and defective speech.

#### DRAMA AND THE THEATRE

Students may confer either with the departmental representative in the Drill Hall, or with the individual instructors, who will be in their offices both on registration day and on the first day of instruction. For further information about registration, or advanced work, consult Mr. DRUMMOND, *GS 244*, or Mr. STAINTON, *GS 239*.

**Phonetics and Speech Training** are listed under Public Speaking.

**S 41. Dramatic Production.** Credit two hours. Daily except Sat., 10. *Stage Laboratory, Morse.* Assistant Professor STAINTON.

For upperclassmen and graduates. Theory of stage direction: fundamentals of theatrical mounting; survey of practical phases of production. Prerequisite for further graduate work in Dramatic Production.

**S 42. Dramatic Interpretation and Acting.** Credit two hours. M W F, 2-4. *GS B.* Assistant Professor WOHL and Dr. ALBRIGHT.

A practice course in oral interpretation, pantomime, acting, and group rehearsal.

**S 43. Choosing and Directing School and Community Plays.** Credit two hours. Daily except Sat., 10. *GS B.* Assistant Professor WOHL and Dr. ALBRIGHT.

The time of the course is divided between a survey of play lists, with reading of typical plays; and a study of methods of presentation, with practice in direction and rehearsal.

Two sections: Mr. WOHL's, planned for the work of city high schools and colleges; Mr. ALBRIGHT's, for smaller high schools, rural schools, and community clubs.

**S 45. Stage Craft and Elementary Stage Design.** Credit two hours. Daily except Sat., 12, with additional laboratory hours to be arranged. *Stage Laboratory, Morse.* Assistant Professor STAINTON.

Planning of small theatres; stage arrangement; problems and practice in construction and scene design; assignments will vary with the needs of the individual. Laboratory fee, \$5.

**S 49. Playwriting.** Credit two hours. M W, 2-4. *GS 242.* Professor DRUMMOND.

Theory of the drama and dramatic composition. Each student will write three one-act plays during the session.

**S 66. Dramatic Art.** Credit two hours. Daily except Sat., 12. *GS 242.* Professor DRUMMOND.

For upperclassmen and graduates having sufficient preparation for somewhat advanced work in the theory of the theatre. Readings, reports, and lectures.

**S 90. Theatre Practice.** Credit one hour if taken with S 41, S 42, S 43, S 66. Hours to be arranged. Open by consent of instructor. Assistant Professor STAINTON, assisted by MR. LEWIS and members of the Summer Theatre Staff.

Four sections: S 90A, **Stagecraft and Technical Stage Practice**; S 90B, **Stage Lighting**, for those who have had S 45 or S 90A or the equivalent; S 90C, **Stage Make-up**; S 90D, **Costuming**. The various sections may be taken for credit in successive summers.

Technical practice coordinated with the regular productions of the Summer Theatre.

**Modern Drama.** See English S 17.

**Dramatic Literature.** For graduates. See English S 31.

**Shakespeare.** See English S 20.

**Classical Drama in English Translation.** See under department of **Comparative Study of Literature**.

#### THE SUMMER THEATRE

During the Summer Session weekly performances will be given by THE SUMMER THEATRE Company. Members of the courses in Dramatic Production may compete for places in the casts and production staffs of Summer Theatre plays. For this work they will register in the regular classes in Dramatic Production during the first week of the session.

**Director:** PROFESSOR DRUMMOND; **Assistant Director:** Assistant Professor STAINTON; **Technical Director:** J. COLBY LEWIS; assisted by Assistant Professor WOHL, Dr. ALBRIGHT, Mr. FOSSEN, Mr. CURVIN, Mr. DUNHAM, Mr. MOORE, Miss WORMAN, and other members of the Cornell University Theatre Staff.

MUSEUM OF MODERN ART FILMS, selected from *Early American Films*, and from *Memorable American Films* will be an additional weekly feature of the Theatre's program. Subscription tickets at \$2.50 for the series will be on sale at Willard Straight Hall.

#### SPANISH

**S 1. Course for Beginners.** Credit four hours. Daily except Sat., 8 and 12. GS 277. Professor DALE. Entrance credit, one unit.

Drill in the essential rules of grammar, reading, composition, and pronunciation.

**S 10. Spanish Literature.** Credit two hours. Daily except Sat., 10. GS 277. Professor DALE.

The Rogue Novel. Lectures, readings, classroom discussions.

**S 30. Spanish Seminary.** Credit one hour. Hours and room to be arranged. Professor DALE.

Thesis subjects and related material for graduate students.

### PHILOSOPHY, HISTORY, GOVERNMENT, ECONOMICS, AND SOCIOLOGY

#### ECONOMICS: AGRICULTURAL ECONOMICS

The following courses are designed to meet the needs of three classes of students in the Summer Session: (1) those desiring regular college credit for general economics; (2) students with special interests in economic subjects; (3) students seeking broad preparation for the teaching of economics in the secondary schools. For the first group, Course S1 covers the subject matter usually included under elementary economics. For Cornell students: Course S1 satisfies the economic requirement in the College of Engineering and will also serve in lieu of Course 1 as a prerequisite for admission to various advanced courses in economics. Graduate students wishing to pursue special investigations will be afforded assistance by members of the Department of Economics who may be in residence in Ithaca during the summer.

**S 1. Modern Economic Society.** Credit four hours. Twice daily except Sat., 11 and 12. *GS 256.* Assistant Professor SOUTHARD.

Survey of the existing economic order, its more salient and basic characteristics, and its operation.

**S 12. Financial History of the United States.** Credit two hours. Daily except Sat., 11. *GS 264.* Assistant Professor O'LEARY.

A study of developing financial institutions and legislation from 1700 to 1900. Monetary, banking, and fiscal problems will be dealt with against the changing background of American economic organization.

**S 21a. Elementary Accounting.** Credit three hours. Daily except Sat., 10. Two practice periods per week to be arranged. *West Sibley 2.* Professor BANGS and Mr. HANSELMAN.

Theory of debit and credit: the journal and ledger; the preparation of balance sheets and income statements; special journals; balance sheet analysis; financial mathematics—the use of compound interest tables, bond valuation, sinking funds.

**S 31. Corporation Finance.** Credit two hours. Daily except Sat., 9. *GS 264.* Assistant Professor O'LEARY.

A study of the financial problems of the business corporation from the points of view of the management, the investor, and the public.

**S 32. Public Control of Business.** Credit two hours. Daily except Sat., 10. *GS 256.* Professor HOMAN.

An examination of the economic and legal foundations of public control, including a summary view of the expansion of control under the Roosevelt Administration.

**S 80. Economic Theory.** Credit two hours. Daily except Saturday, 9. *GS 256.* Professor HOMAN.

Special problems in the analysis of economic relationships.

**A 115. Prices.** Credit three hours. Lectures, daily except Sat., 9. *Agricultural Economics 125.* Laboratory, W, 1:40-4. *Agricultural Economics 140.* Assistant Professor CUNNINGHAM.

An examination of the movements of agricultural and industrial prices. Fee for materials, \$2.00.

**A 138. Taxation.** Credit two hours. Lectures, daily except Sat., 11. *Agricultural Economics 225.* Assistant Professor KENDRICK.

The emphasis of the course is on state and local problems connected with rural taxation. The growth of public expenditures, the rise of modern tax problems, and the various problems of general property, income, inheritance, and motor vehicle taxation are treated. Attention is also given to the problems of state aid and of building a system of taxation. Fee for materials, \$2.00.

See also courses in **Farm Management** in the division of **Agriculture**.

## GOVERNMENT

**S 6. Current Problems of American Politics.** Credit two hours. Daily except Sat., 9. *Boardman D.* Professor CUSHMAN.

The organization and methods of political parties; nominations, elections. Current political issues.

**S 28. The American Constitutional System.** Credit two hours. Daily except Sat., 11. *Boardman E.* Professor CUSHMAN.

Nature and development of the American constitutional system; contemporary constitutional issues.

See also **Local Government**, in the Department of **Agricultural Economics and Farm Management** of the division of **Agriculture**.

## HISTORY

**S 1. The History of Rome from 146 B.C. to A.D. 14.** Credit two hours. Daily except Sat., 9. *Boardman E.* Professor LAISTNER.

A survey of the political, economic, and cultural history of Rome and her empire from the destruction of Carthage to the death of Augustus.

**S 2. Hellenistic Civilization.** Credit two hours. Daily except Sat., 10. *Boardman E.* Professor LAISTNER.

After a brief survey of political history, this course will deal more fully with the material culture and intellectual achievement of the Greek World during the two centuries after the death of Alexander the Great. Prerequisite, some previous work in Ancient History or in the Greek and Latin Classics, and correspondence or consultation with the instructor before registering.

**S 13. American History.** Credit two hours. Daily except Sat., 10. *Boardman D.* Professor BRETZ.

Political and constitutional problems of the present viewed in the light of their historical background. Among the topics discussed will be amending the Federal constitution, constitutionality of law, the doctrine of states rights, general welfare of the United States, and other fundamental issues of historical significance. Open for credit to those who had S 13 in the Summer Session of 1935.

**S 14. American History, Westward Expansion, 1750-1830.** Credit two hours. Daily except Sat., 8. *Boardman D.* Professor BRETZ.

A survey of the crossing of the Appalachian barrier and the creation of new states in the Mississippi Valley. The emphasis is upon the social history of the movement, but attention is paid to problems of war and diplomacy connected with northern and southern frontiers and to the more recent literature of the westward movement.

**S 17. Contemporary History and its Teaching in the Secondary Schools.** Credit two hours. Daily except Sat., 10. *Boardman C.* Mr. KIDGER.

The history of Europe since the World War: the Peace Treaty; the League of Nations; social, economic, and political developments in the leading European countries; backgrounds for the rise of dictatorships; the Five Year Plans in Russia; elements tending toward stability and toward change in present European situations. Both in method and in content the course will be useful to teachers in secondary schools especially such as teach the courses in world history prescribed by the new syllabus of the University of the State of New York.

**S 45. European History, 1870-1935.** Credit two hours. Daily except Sat., 10. *Boardman B.* Acting Assistant Professor GERSHOY.

A general survey of recent developments with emphasis upon the dominant factors and their interrelationships rather than upon the minute details of chronological history. Without sacrificing the national history of the particular states, this survey will endeavor to place that history within the framework of the larger forces and problems common to the whole of European civilization.

**S 46. Pre-Revolutionary Europe, 1748-1789.** Credit two hours. Daily except Sat., 11. *Boardman B.* Acting Assistant Professor GERSHOY.

An intensive study of the classes of society and the political and economic conditions under which they lived will serve as the point of departure for an examination of the reactions of those groups to those conditions. The expression of those reactions will be sought in the movement of ideas and in the evolution of the governmental policies of the leading states. Prerequisite, a general course in European history.

## PHILOSOPHY

**S 1. Philosophy of Religion.** Credit two hours. Daily except Sat., 11. *GS 225.* Professor BURTT.

A study of the major types of religious belief in the contemporary world in relation to their philosophical background.

**S 2. American Philosophy.** Credit two hours. Daily except Sat., 10. *GS 225.* Professor BURTT.

After a brief consideration of the historical background the course will examine the prominent types of philosophy exhibited in recent and present American thought.

## SOCIOLOGY: RURAL SOCIOLOGY

**A 1. General Sociology.** Credit two hours. Daily except Sat., 8. *GS 225*. Acting Professor SUTHERLAND.

A study of the structure and functioning of society, its group organization and activities. Social processes, social forces, and social controls will be exemplified for both rural and urban life.

**A 12. Rural Sociology.** Credit two hours. Daily except Sat., 8. *Agricultural Economics 340*. Assistant Professor POLSON.

A study of groups, institutions and organizations found in rural society. The structure and function of rural groups are analyzed and attention is given to the processes and results of group action.

**A 56. Social Problems and Public Welfare Organization.** Credit two hours. Daily except Sat., 9. *GS 225*. Acting Professor SUTHERLAND.

A study of social problems such as poverty, delinquency, crime, the physically handicapped, the feeble-minded and mentally diseased, social insurance, public health, mothers' pensions, unemployment and the like; a consideration of public and private agencies for social work and desirable public policy with regard to their organization and support.

**A 111. Rural Community Organization.** Credit two hours. Daily except Sat., 11. *Agricultural Economics 302*. Assistant Professor POLSON. Prerequisite, course A 12 or its equivalent or permission of instructor.

A consideration of the structure and functioning of rural community organizations; the organization of the rural community; and a review of group work techniques, such as local leadership development, program planning, use of group activities for informal teaching, the use of committees, and inter-organization cooperation.

**A 121. The Family.** Credit two hours. Daily except Sat., 10. *Agricultural Economics 340*. Assistant Professor COTRELL. Prerequisite, course A 11 or its equivalent.

This course deals with the social problems of the family both on the farm and in the city; the history of the family; the differences in family life in country and city; the function of the family in society; relations of parents and children; marriage and divorce; and factors affecting family relations.

**A 133. Propaganda and Public Opinion.** Credit two hours. Daily except Sat., 11. *Agricultural Economics 340*. Assistant Professor COTRELL.

A study of social-psychological factors involved in the formation of public opinion; relation of public opinion to collective behavior; and the propaganda techniques used in maintaining and controlling public opinion and collective behavior. Special attention will be given to the phenomena in rural social life.

## EDUCATION

## EDUCATION: RURAL EDUCATION

## THE GRADUATE SCHOOL OF EDUCATION

The Graduate School of Education, by integrating the work in the Departments of Education and Rural Education, offers courses that prepare for the more important types of teaching, supervisory, and administrative positions.

## THE PRINCIPALS' CERTIFICATES

The State Department of Education has approved curricula for the training, at Cornell University, of persons for the various types of principalships. Usually it should be possible for the student who is matriculated in the Graduate School to satisfy the requirements for a Master's degree in Education at the same time that he is completing the program for a principal's certificate. The student who is already matriculated should consult the chairman of his special committee. Others should confer with the Director of the Graduate School of Education.

## SPECIAL CONFERENCES

**Cornell Conference of School Administrators and Pupil Personnel Workers on Assisting the Individual Child.** This, the third summer session conference dealing with this general problem, will be held August 3 to 7. The needs of the individual child will be considered from the point of view of each of the several professional groups concerned: school administrators, attendance officers, health workers, visiting teachers and other social workers, teachers of various types of exceptional children, and the like. There will be both general sessions and group conferences. Registration fee, \$2.

**Home Economics Leadership Training, July 13-25.** This conference, for county leaders of home economics and their alternates, is sponsored by the State Department of Education. Its purpose is to train for county group leadership. Study will be made of the organization of the county teacher group, the functions of the organization, its development and place in the state education program. There will be two two-hour sessions daily. No fee. Miss VAN LIEW in charge.

## EDUCATIONAL PSYCHOLOGY

**S 1. Educational Psychology.** Credit two hours. Daily except Sat., 2. *GS* 256. Professor OGDEN.

A course in *Gestalt* psychology as applied to the process of education. Main topics: original nature of behavior, experience of behavior, improvement of behavior. Textbook: Ogden and Freeman, *Psychology and Education*.

**S 7. Mental Measurements.** Credit two or three hours. With consent of the instructor, this course may be taken without observations for two hours credit. Daily except Sat., 9. *GS* 227. Observation hours to be arranged. Professor FREEMAN.

Lectures, readings, and testing observations. History of individual and group tests of intelligence; principles underlying their construction; concepts of intelligence; uses of tests in schools and other fields.

**A 12. The Exceptional Child.** Credit two hours. Daily except Sat., 11. *GS* 134. Professor FREEMAN.

Study of atypical children. Implications for education. Lectures, readings, case studies. Students who have not had or are not now taking a course in mental measurements may be admitted only on approval of the instructor.

**A 116. Child Psychology.** Credit two hours. Daily except Sat., 10. Stone 102. Professor KRUSE.

Students who have not had a course in educational psychology admitted only on approval of instructor.

**A 212. Psychology of Learning.** Credit two hours. M W F, 2-3:20. *East Roberts* 232. Professor KRUSE.

For students who have had at least an elementary course in psychology and wish to extend their study of the learning process.

**A 215. Psychology of Adolescence.** Credit two hours. Daily except Sat., 10. *Agricultural Economics* 125. Assistant Professor WINSOR.

A study of the behavior of children during the adolescent stage of development. An elementary course in psychology is prerequisite.

## EDUCATIONAL METHOD

**S 4. Secondary School Methods.** Credit two hours. Daily except Sat., 10. *GS* 264. Assistant Professor HULSE.

A critical study of the theory of method, through an analysis of teaching objectives, types of subject-matter and basic teaching procedures. Current plans and techniques of teaching will receive considerable attention in order to determine their characteristic values. Familiarity with the secondary school pupil through experience is assumed.

**S 30. Teaching the Social Studies in the Senior High School.** Credit two hours. Daily except Sat., 12. *GS 225.* Mr. KIDGER.

This course considers the objectives of the social studies in the senior high school in relation to the objectives in previous grades. A comparison will be made of the place in the high school curriculum proposed for the social studies in various committee reports, as well as in practice in various school systems. The fusion of geography, history, and civics will be discussed. The importance of Problems of Democracy and the techniques to be employed in teaching it will be outlined. The desirability of the introduction of socio-economic and of controversial subject matter will be taken up. A consideration of various types of classroom procedure, of the most effective measurements and tests, visualizations, workbooks, units, the use of outside reading, maps, charts, notebooks.

**A 107a. The Teaching of Nature Study and Elementary Science.** Credit two hours. Lectures, M W F, 10. *Fernow 8.* Field and laboratory work, T Th, 10-12:30 or 1:40-4. Professor PALMER and Miss GORDON.

To acquaint teachers with the principles and methods of education through nature study and elementary school science. Provision will be made through laboratory and field experience for consideration of the biological and physical science commonly found in representative elementary school programs in these fields. Laboratory and field work open only to those taking the work for credit.

**A 122. Education Through Child Activity.** Credit two hours. Daily except Sat., 8. *Comstock 17.* Miss HICKS.

Planned for elementary school teachers who wish to understand the theory and practice of a child activity school. Besides gaining background from the course, a student may organize an activity plan for her own situation. Directed observation together with individual and group conferences.

Enrollment limited to 30. Applications for admission should, therefore, be sent to the Director of the Graduate School of Education as early as possible. Membership of the class will be fixed tentatively about June 15.

**A 122a. Observation of Child Activity Education.** No credit. Daily except Sat., 9-12, and conference hours to be arranged. *Comstock 17.* Miss HICKS and Miss EBRITE.

So far as facilities permit, Summer Session students will, under certain conditions, be permitted to observe teaching in this field. Various group conferences will be held for the purpose of discussing and interpreting the teaching observed. Requests for permission to register for this course should be made to the instructor during the first three days of the Summer Session.

**A 128. The Teaching of Natural History in the Field.** Credit three hours. Lecture, M, 12. *Fernow 8.* Field work, F, 1:40 p.m. to Sat., 8 p.m. Professors PALMER, ALLEN, WRIGHT, PETRY, HOSMER, WHETZEL, and JOHNSON; Miss GORDON.

This course is designed primarily to acquaint experienced science teachers with methods of field studies suitable for use in public school teaching and in teacher-training institutions. Trips will combine a variety of ecological sites with the observation of methods used by leaders in botany, ornithology, general ecology, entomology, forestry, astronomy, and paleontology. Practice will be given in field teaching under supervision. Students will live in the field from Friday noon to Saturday night. The privilege of advance registration is extended. Membership of the class will be fixed tentatively June first. Enrollment is limited to twenty. Applicants should file with Professor E. L. PALMER detailed records of their teaching experience and training in science. Students will furnish their own bedding, pup tents, or sleeping bags. Meals and transportation will be supplied at cost, which for the six weeks will not exceed \$20. This is to be paid in advance. Open only to those taking work for credit.

**A 133. Directed Agricultural Teaching.** Credit one hour. Hours to be arranged. *Stone 206.* Assistant Professor HOSKINS.

Open only to students in A 232 or to those who lack credit for certification in New York State.



A 134a. **Adult Education.** Credit two hours. Daily except Sat., 11. *Agricultural Economics* 240. Assistant Professor HOSKINS.

The consideration of the development, trends, opportunities and problems; given from the standpoint of special education and more particularly of vocational education. Teachers of Home Economics who enroll in this course will have opportunity to discuss with a specialist the adult education problems peculiar to their work.

A 142a. **Organization and Method of Teaching Industrial Arts.** Credit two hours. Daily except Sat., 8. *Agricultural Economics* 240. Mr. WILLMOTT.

Designed for students of vocational education. Deals with points of view, aims and objectives, organization of materials and courses for small high schools; also with related subject matter, the management of the shop, including shop equipment, shop procedures, and State Education Department regulations.

A 143. **The Organization and Teaching of Technical Subjects.** Credit two hours for each part.

For graduates of colleges of engineering, applied science, architecture or applied art. The materials are arranged in three parts, two of which are given in 1936. The third is planned for 1937.

- a. Curriculum construction in technical high school courses and in the related technical subjects in industrial high schools. Daily except Sat., 9. *Agricultural Economics* 240. Mr. FENNINGER.
- b. Organization of content into units, topics and lessons; preparation of drawings, lesson plans, instruction sheets and other aids to instruction. (Not given in 1936)
- c. Special methods applicable to teaching technical and related subjects in shop, drawing, laboratory and class room. Daily except Sat., 8. *Rockefeller* 106. Mr. GRAY.

S 226. **The Teaching of General Science in Secondary Schools.** Credit two hours. Daily except Sat., 9. *Fernow* 8. Assistant Professor JOHNSON.

The aims and objectives of general science developed as bases for the selection and organization of subject matter suitable for junior and senior high schools. A study and demonstration of effective plans for the presentation of science lessons in secondary schools together with consideration of problems associated with materials and equipment.

A 232. **The Teaching of Agriculture in the Secondary School.** Advanced course. Credit two or three hours. Daily except Sat., 9. *East Roberts* 232. Assistant Professor HOSKINS.

The aims and objectives of vocational agriculture, the determination of courses from field studies and analyses, the selection of suitable materials and methods of teaching, and relationships with the agencies of agricultural education in the community.

The third hour is limited to teachers of agriculture in New York State who desire to meet certificate requirements.

A 235. **The Teaching of Family and Social Relationships in the Secondary School.** Credit two hours. Daily except Sat., 2. *Stone* 203. Assistant Professor ROCKWOOD.

This course has two purposes: to help teachers to see education for family life as a continuous, unified program throughout the lifetime of the individual and secured from many sources and by varying means; and to assist them in planning and teaching high school courses in family and social relations.

A 236. **Creative Procedures in the Teaching of Home Economics in the Junior High School.** Credit two hours. Daily except Sat., 11. *Stone* 203. Miss HUTCHINS.

Designed to assist teachers in the interpretation of the Junior High School Home Economics program and its place in secondary education. This course includes a study of objectives of the program; desirable outcomes in terms of children; pupil activities; teaching procedures; teaching aids.

A 242. **Industrial Arts Education.** Credit two hours. Daily except Sat., 10. *East Roberts* 223. Mr. WILLMOTT.

Aims, objectives, practices and outcomes will be discussed. Particular consideration will be given to such topics as these: the relationship of the industrial arts work to the general program and to vocational classes; the development of skills; projects; related content; and the development of motivation through industrial arts.

A 242a. **Seminar in Industrial Arts Education.** Credit two hours. Daily except Sat., 9. *Agricultural Economics* 340. Mr. FALES.

A list of needed researches will be formulated. Each student will be expected to undertake the development of a study which will be completed in subsequent seminars required for the industrial arts supervisor's license.

A 250. **Seminar in Agricultural Education.** Credit two hours. Daily except Sat., 8. *Stone* 203. Professor STEWART and Dr. GETMAN.

National and state policies and practices in the teaching of vocational agriculture interpreted and evaluated in the light of educational standards.

#### ADMINISTRATION, SUPERVISION, AND CURRICULUM

S 5. **High School Administration.** Credit two hours. Daily except Sat., 3. *GS* 225. Dr. JAGGERS.

Problems in the administration of the school building as a unit, in contrast to the administration of an entire school system. Particular attention will be given to village and central rural schools.

S 10. **Problems in High School Administration.** Credit two hours. T Th, 1:40-4. *GS* 227. Professor JORDAN.

An advanced course in high school administration, dealing with problems peculiar to the administration of secondary schools. The course presupposes preliminary courses including administration, curriculum, and supervision. The materials are so arranged in a three-year cycle as to give graduate students a continuous three-year course. These cycles are: I. Organization and Management of the Building, 1937; II. The Teaching Staff, 1938; III. The Pupil; and the Public, 1936.

Students may enroll in any unit of this course; and particular attention is given to the needs of the group. Permission of the instructor must be obtained before enrollment. Papers and reports required.

S 11. **Extra-Classroom Activities.** Credit two hours. Daily except Sat., 8. *GS* 256. Professor JORDAN.

A study of the place extra-classroom activities should assume in the school program. General principles involved, with special attention to athletics, dramatics, publications, school finance, music, debate, and school clubs. Individual problems of the class will have special attention.

A 169a. **Administrative Problems of the Homemaking Teacher.** Credit two hours. Daily except Sat., 9. *Stone* 309. Miss HUTCHINS.

Designed to help teachers solve major problems in the organization and administration of the homemaking program in school and community. Consideration will be given to the teacher's responsibility to local and state administrators; the state program of Home Economics; adjustments of courses to fit individual situations; the budget; location and types of centers; the school lunch; methods of securing the interest of the community in the Home Economics program.

A 243. **Administration of Vocational Education.** Credit two hours. Daily except Sat., 11. *Stone* 309. Dr. MACDONALD.

A study of the administrative responsibilities of a director of vocational education. The policies and practices which are essential to the securing and maintaining of such working conditions as will permit of the successful operation of a city program of vocational education in all its aspects.

A 243a. **Supervision of Technical Education.** Credit two hours. Daily except Sat., 10. *Stone* 309. Mr. DRY.

Principles and practices in the improvement of instruction in all phases of technical and industrial high school courses.

A 243b. **Seminar in Vocational Industrial Education.** Credit two hours. Daily except Sat., 8. *Stone* 309. Dr. MACDONALD.

A critical study of researches in vocational and industrial education with particular reference to the following problems: development of better procedures in dealing with groups; vocational school organizations; courses of study; surveys of educational opportunities; a more functional content; evaluating the vocational program; better methods of teaching.

A 249. **Seminar in Home Economics Education.** Credit two hours. Daily except Sat., 12. *Stone* 203. Professor BLAZIER.

Primarily for graduate students majoring or minoring in Home Economics Education. This course is planned on a three-session cycle. One or more units may be selected, making possible two to six hour credits in this course: (a) Curriculum Development and Building in Home Economics Education (1935); (b) Service and Research Studies (1936); (c) Evaluation of Home Economics Education (1937).

Unit b is required of all graduate students majoring in Home Economics Education. Students are urged to survey their own needs and interests and to be prepared to present problems for service or research study.

A 261. **The Administration of Rural Schools.** Credit two hours. Daily except Sat., 8. *Stone* 102. Professor BUTTERWORTH.

A general course in school administration dealing especially with the problems of village and central schools. Individual attention will be given to those who are working in larger schools.

A 262b. **The School Plant.** Credit two hours. Daily except Sat., 10. *East Roberts* 232. Dr. JAGGERS.

Problems covering the planning, construction, measurement, and utilization of school buildings and their constituent units. Particular attention will be given to buildings in village and central rural school districts. A course in general school administration and one in the curriculum must precede or accompany this course.

A 262g. **Special Problems in Rural School Finance.** Credit two hours. Twice daily except Sat., Aug. 3-14. First meeting, M, 9. *Agricultural Economics* 101. Dr. SIMPSON.

Problems involved in the application of principles with special relation to New York and the rural field. Among the more important topics to be considered are: taxation including the tax limitation issue; new movements in state aid; fiscal control; school district reorganization; local initiative; the economic status of the teacher; teachers' salaries; finance planning.

A unit course designed primarily for district superintendents of New York State. Not open to students enrolled in the regular summer session.

A 263. **Procedures and Techniques in Supervision.** Credit two hours. Daily except Sat., 9. *Stone* 102. Professor MOORE.

Designed for superintendents, supervisors, and principals. Inexperienced students admitted only by permission. A consideration of the nature and purpose of supervision; the improvement of the learning-teaching process; skill in observation; analysis of methods; relationships between general and specific objectives; selection, analysis, and organization of subject matter; measuring and testing results; assisting teachers in professional growth.

S 266. **The Supervision of Elementary School Subjects.** Credit two hours. Daily except Sat., 11. *GS* 227. Professor MOORE.

Designed for supervisors, elementary school principals, and superintendents. A consideration of important research studies which have a direct bearing upon the teaching and supervision of the elementary school subjects.

A 267c. **Vocational Education in the Public Schools.** Credit two hours. Daily except Sat., 11. *East Roberts* 232. Professor STEWART and representatives of the State Department of Education.

Open to graduate students with teaching experience. Designed primarily for administrative officers and teachers who desire a basic understanding of the vocational program; the place of the industrial, home economics, agricultural and other phases of vocational education in a comprehensive program of public education; the more important problems involved in the organization, adjustment and integration of vocational courses.

**A 269. The Supervision of Home Economics.** Credit two hours. Daily except Sat., 10. *Agricultural Economics* 240. Professor BLAZIER.

This course is intended for teachers who are heads of homemaking departments in secondary schools, for city supervisors and for teacher trainers. Its purpose is to analyze the supervisor's responsibilities, to consider basic principles of supervisory service, methods of evaluating teacher and pupil achievement, diagnostic and remedial supervisory procedures, and to develop insight into the personality factors and the professional skill involved in teacher guidance.

**S 276. Principles of Curriculum Building.** Credit two hours. Daily except Sat., 12. *Stone* 102. Professor FERRISS.

A consideration of major problems, principles, and techniques in determining educational objectives and curriculum content and organization in elementary and secondary schools in the light of modern educational theory and practice. Selected examples of recent courses of study and curriculums will be critically examined.

**A 276a. Practicum in the Elementary School Curriculum.** Credit two hours. Daily except Sat., 10. *Comstock* 17. Miss HICKS.

Designed to give principals and supervisors insight into the theory of newer curriculum developments in elementary education, primarily through actual practice in planning and organizing activity programs, constructing units of work, and in critically evaluating examples of progressive school practice. Open only to students who have taken S 276 or its equivalent.

#### GUIDANCE

**A 28. Educational and Vocational Guidance.** Credit two hours. Daily except Sat., 10. *Stone* 203. Dr. EMERSON.

A course in the theory and practice of educational and vocational guidance; procedures and techniques in adjustment of pupils to educational and vocational surroundings; guidance functions of teachers and executives.

This course is planned especially for administrative officers and persons desiring to specialize in the guidance field.

**A 28a. Educational and Vocational Guidance.** Credit two hours. Daily except Sat., 11. *Stone* 102. Dr. EMERSON.

A study of the theory and practice of educational and vocational guidance in secondary schools; procedures and techniques in the adjustment of pupils to educational and vocational surroundings; community resources useful in guidance and methods of utilizing them; guidance functions of teachers.

This course is similar to Course A 28 but is intended primarily for teachers having some responsibility for participating in the guidance program of the secondary school.

**A 29. Analysis of the Individual and Counseling.** Credit two hours. Daily except Sat., 2. *Stone* 309. Dr. EMERSON.

A study of the problems and techniques of individual analysis with reference to educational, vocational and other problems; the techniques of interviewing, with some reference to aptitude testing, the case work approach, organization of needed information, and utilization of community resources from the standpoint of the counselor.

**A 217. Psychological Tests in Guidance.** Credit two hours. Daily except Sat., 8. *East Roberts* 232. Assistant Professor WINSOR.

A study of testing and rating devices designed as an aid in vocational guidance and industrial education.

PRINCIPLES OF EDUCATION

**S 6. Philosophy of Education.** Credit two hours. Daily except Sat., 11. *GS 242.* Professor EATON.

Intended for graduate students who by study or experience are well advanced in knowledge of education.

**A 194. Education and Vocations.** Credit two hours. Daily except Sat., 9. *Stone 203.* Professor EATON.

A study of vocational education from the point of view of a democratic theory of education. Open to graduate students and to seniors who have had courses in educational psychology and in economics or sociology.

**A 281. Secondary Education in Rural and Village Communities.** Credit two hours. Daily except Sat., 9. *Plant Science 143.* Professor FERRISS.

A consideration of some of the more basic problems of providing modern secondary school education adapted to the needs of rural and village communities. Among the problems dealt with are those relating to aims, organization, curriculum, public activities, and extended services of the school.

RESEARCH

**B 300. Research.** Credit as arranged. Members of the staff of the Graduate School of Education.

Students working on theses or other research projects may register for this course. The staff members concerned must be consulted before registration.

**A 238. Economics and the School.** Credit two hours. Lectures daily except Sat., 9. *Agricultural Economics 225.* Assistant Professor KENDRICK.

For description, see under **Agricultural Economics and Farm Management** in the division of **Agriculture**.

For **Teachers' Courses** in other subjects, see the index, page 75.

HEALTH EDUCATION

**S 1. Mental Hygiene of Childhood.** Credit two hours. Daily except Sat., 8. *Stimson.* Dr. YORK.

A discussion of the common behavior problems (truancy, delinquency, failure, etc.) arising from such causes as faulty habit training, physical and mental handicaps, social conditions, inadequate energy outlets. Some problems of adolescence will also be considered.

**S 4. School Health Problems.** Credit two hours. Daily except Sat., 9. *Stimson.* Dr. EVANS.

A discussion of the modern school health program and the teacher's responsibility in the various phases of this program.

PHYSICAL EDUCATION

**S 12. Gymnastics and Body Mechanics.** Credit one hour. Daily except Sat., 12. *Sage Gymnasium.* Miss THORIN.

Practice in gymnastics in accordance with Swedish, Danish, Finnish, and modern German methods. A study of faulty postures with lectures and practice in examinations, measurements, and efficiency tests of children and adults.

**S 13. Leadership in Community Recreation Programs.** Credit one hour. Daily except Sat., 2. *Sage Gymnasium.* Miss THORIN.

This course includes a study of the need, nature, function, and development of recreation programs. Special consideration is given to the contributions of Physical Education to community recreation and the functions of directors, supervisors, and teachers of Physical Education in organizing and administering recreation programs.

**S 14. Folk and Tap Dancing.** Credit one hour. Daily except Sat., 3. *Sage Gymnasium.* Miss THORIN.

Simple singing games, more advanced folk dances and tap dancing. Source of material.

**S 15. The Modern Dance.** Credit one hour. Daily except Sat., 4. *Sage Gymnasium*. Miss THORIN.

Fundamentals of bodily movements, relation of music to the dance, the study of rhythm, educational aspects of the dance.

**S 16. Swimming.** No credit. Hours to be arranged. The new pool in the *Old Armory*. (Women) Miss THORIN and assistants. (Men) Mr. O'CONNELL.

Instruction in beginning, intermediate, and advanced swimming and diving. Red Cross life saving.

A special fee of ten dollars is charged for 18 hours of class instruction. Private lessons one dollar.

**S 18. Tennis** (Men and Women). No credit. Hours to be arranged. *Risley Courts*. Mr. MURRAY.

A special fee is charged, ten dollars for ten lessons.

**Recreational Folk Dancing.** Arranged by the Department of Physical Education and Willard Straight Hall. For men and women among the faculty and students. W, 5, *Recreation Room, Willard Straight Hall*; Th, 5, *The Green, Agricultural Campus*.

**Instruction in Social Dancing.** A recreational activity arranged by the Department of Physical Education and Willard Straight Hall.

**Tournaments.** Tennis, Badminton, and deck tennis tournaments, arranged by the Department of Physical Education. For further information consult *Sage Gymnasium Office*.

A nominal fee of ten cents per period will be charged for the use of the tennis courts. (12 play periods for \$1.00).

## PSYCHOLOGY AND BIOLOGICAL SCIENCES

### THE SUMMER SCHOOL OF BIOLOGY

From 1923 to 1934 the Summer Session courses in the Biological Sciences were given largely in the Summer School of Biology, but in part in the Summer School of Agriculture. These two groups of courses have been brought together in the list given below, and the Summer School of Biology as an independent administrative unit has been discontinued.

### BACTERIOLOGY

**A 1. General Bacteriology.** Credit two or four hours. Lectures, daily except Sat., 1:40. Laboratory, daily except Sat., 2:30-4:30. *Dairy 119*. Professors SHERMAN and STARK.

An introductory course giving a general survey of the field of bacteriology, together with the fundamentals essential to further work in the subject. The morphology, physiology, and classification of bacteria; the culture of microorganisms, simple and differential staining, and general bacteriological technique; the bacteriology of soil, air, water, sewage, milk, and foods; the principles of immunity and the microbiology of disease.

Laboratory fee, \$10, for those seeking four credit hours.

**A 220. Special Problems.** Credit and hours by arrangement. Professors SHERMAN and STARK.

Special problems in bacteriology may be elected by qualified students with the permission of the instructors.

### BIOLOGY

**A 1. General Biology.** Credit two or three hours. Lectures and demonstrations, two hours; laboratory, one hour. Lectures, daily except Sat., 9. *Roberts 392*. Laboratory and field work, T Th, 1:40-5. *Roberts 302*. Professor CLAASSEN.

Designed to acquaint the general student and the prospective teacher with the main ideas of biology through selected practical studies of the phenomena on which biological principles are based. Lectures, demonstrations, laboratory work, and field trips include studies of such simpler organisms as protozoa, algae, fungi, and bacteria, followed by studies of the more highly specialized forms of plant and animal life. Laboratory fee, \$2.50.

## BOTANY

**A 1a. General Botany—Anatomy and Physiology.** Credit three hours. Equivalent to Botany 1, first term. Lectures, daily except Sat., 10. Laboratory and conferences, daily except Sat., 11-12:30. *Plant Science* 141, 262. Professor PETRY and Mr. SPENCER.

The structures and life processes of the higher plants are examined in detail, with considerable attention to information necessary for more advanced or practical work with plants. Students taking this course may attend the field trips offered in connection with Botany A 1b. Laboratory fee, \$3.50.

**A 1b. General Botany—Morphology and Taxonomy.** Credit three hours. Equivalent to Botany 1, second term. May be taken in conjunction with Botany A 1a, or independently. Lectures, daily except Sat., 2. Laboratory, daily except Sat., 3-4:30. Three half-day field trips on Saturdays to be arranged. *Plant Science* 141, 242. Mr. PALMQUIST.

Representatives of the principal groups of plants are studied with a view to acquainting the student with the plant kingdom as a whole. The principal families of ferns and flowering plants are examined and practice in identification is given.

The field work is intended to afford to teachers and others first-hand knowledge of the commoner plants of all the great groups. Facilities for collecting plant materials for teaching or other purposes will be provided. Laboratory fee, \$3.50.

**A 2. Plant Physiology.** Credit four hours. Equivalent to Botany 31. Prerequisite, course A1 or its equivalent and elementary chemistry. Lectures, daily except Sat., 12. *Plant Science* 141. Laboratory, T W Th F, 9-12. *Plant Science* 227. Professor O. F. CURTIS.

This course is designed to acquaint the student with the important life processes of plants. Topics such as water-relations, photosynthesis, translocation, digestion, respiration, mineral nutrition, and growth relations are studied in some detail and particular emphasis is placed both in laboratory and in classroom on discussion of the principles and their applications to growing plants. Laboratory fee, \$4; deposit, \$3.

**A 3. Taxonomy of Vascular Plants.** Credit four hours. Equivalent to Botany 117. Prerequisite, course A 1 or its equivalent. Lectures, M T W Th, 2. Laboratory, M T W Th, 3-6, F, 2-5. Several all-day field trips will be arranged. *Plant Science* 211. Professor WIEGAND.

A study of the kinds of seed plants and ferns; their classification into genera, families, and orders; and field work on the local flora. Emphasis will be placed on wild plants, but the more common cultivated plants will have some attention. The course is planned to follow course A 1 and to furnish an introduction to the knowledge of field botany and to the classification of the higher plants, in preparation for special work in various departments and as an aid in teaching. Instruction will be given in herbarium methods. Laboratory fee, \$4; deposit, \$5.

**A 4. Comparative Morphology of Fungi.** Credit four hours. Equivalent to Plant Pathology 121. Prerequisite, course A 1 or its equivalent and permission to register. Lectures, M W F, 9. *Plant Science* 336. Laboratory, fifteen actual hours a week, by arrangement. *Plant Science* 329. Professor FITZPATRICK.

An elementary synoptical course designed to acquaint the student with the general field of mycology. Emphasis is placed on morphology and phylogeny, rather than on taxonomy, but abundant opportunity is given for field work. Laboratory fee, \$6; deposit, \$3.

**A 5. Plant Anatomy.** Credit four hours. Prerequisite, course A1 or an equivalent and permission to register. Laboratory, M T Th F, 8-11:30. Hours

for lectures to be arranged within these periods. *Plant Science* 228. Professor EAMES.

A course in the descriptive anatomy of vascular plants with emphasis on practice in interpretation and determination of material. Laboratory fee, \$5.

**A 7. Mycology.** Credit four hours. Prerequisite courses A1 and A4 or their equivalent and permission to register. Lectures or conferences, T Th, by arrangement. Laboratory, fifteen actual hours a week, by arrangement. *Plant Science* 329. Professor FITZPATRICK.

An advanced course designed for students who wish to specialize in botany or plant pathology. An intensive study of the morphology, taxonomy, cytology, and phylogeny of the fungi. Emphasis is placed on field work, with extensive practice in determination of material.

The groups of the fungi are studied in successive summers in the following order, (1) Phycomycetes, (2) Ascomycetes, (3) Basidiomycetes, (4) Uredinales, Ustilaginales, Fungi Imperfecti, and Myxomycetes. By repeating the course, the student may obtain in four summers the equivalent of Plant Pathology 221 and Plant Pathology 222. He may begin with any one of the four groups and need not take them in unbroken sequence. In the 1936 Summer Session, group (1) Phycomycetes, etc., will be given. Laboratory fee, \$6; deposit, \$3.

[A 8. **Morphology of Vascular Plants.** Not given in 1936.]

**A 13. Trees and Shrubs.** Credit two hours. Lectures and laboratory in two sections, M W, 1:40-5:30 or T Th 1:40-5:30. Registration limited to twenty students in each section; permission to register must be obtained from the instructor before registration is made. *Plant Science* 353. Assistant Professor MUENSCHER.

Intended for those who wish to know the woody plants in the field. The aim is to familiarize the student with the trees and shrubs of Central New York and to teach the main facts of structure, growth, habit, and distribution concerning them. An all day trip to the McLean Wild Life Preserve will be taken on Saturday, August 1. Other trips will be arranged. Laboratory fee, \$1.50; deposit, \$3.

**A 19. Special Problems with Plants.** Credit two or more hours. Hours to be arranged. In registering for this course the name of the professor with whom the work is to be taken must be stated.

Students sufficiently prepared may arrange for the study of some problem or special topic. Such work may lie in the fields of general or taxonomic botany, anatomy, comparative morphology, mycology, cytology, plant physiology, paleobotany, plant pathology, or genetics. A member of the staff must supervise the work.

## ENTOMOLOGY

**A 30. General Entomology.** Credit three hours. Equivalent to Animal Biology 12 or Entomology 12. Prerequisite, Biology 1 or Zoology 1 or its equivalent. Lectures, daily except Sat., 10. *Comstock* 200. Practical exercises, M W F 1:40-4. *Comstock* 200. Professor MATHESON.

This course includes lectures and demonstrations on the characteristics of the orders and families of insects with the study of their habits, life-histories, and relations to other animals and to plants. The laboratory work consists of the study of the structure, ecology, metamorphosis, and classification of insects. Field trips to study insects in their natural habitats are an important feature. Each student is required to collect and prepare a typical collection of insects. Opportunities are given for the rearing of insects in the Insectary, and special work is offered to suit the needs of individual students. Textbook: *Comstock's Manual for the Study of Insects* (1930 edition). Equipment: a good hand lens, several insect cases, insect pins, and labels. These can all be purchased in Ithaca. Laboratory fee, \$2.50

**A 31. Elementary Morphology of Insects.** Credit three hours. Equivalent to Entomology 21. Twenty actual hours a week, by appointment. *Comstock* 270. Professor JOHANNSEN.



This course deals with the external and internal anatomy of several representative insects, such as the locust, roach, cicada, honeybee, crane-fly, etc. Laboratory fee, \$2.

**A 32. Elementary Systematic Entomology.** Credit two or three hours. Prerequisite, courses A 30, A 31, or equivalent.

- (a) The principles of wing venation and the classification of the orders and families. Credit two hours. Fifteen actual hours a week, by appointment. Laboratory fee, \$2. *Comstock 270.* Professor JOHANNSEN.
- (b) Field work including methods of collecting insects and preparing them for study. One hour credit. Two periods of three and one half hours per week to be arranged. Laboratory fee, \$1. *Comstock 265.* Professors JOHANNSEN and MATHESON.

Courses A 31 and A 32 are required of all students who plan to take advanced work in Entomology.

**A 34. Advanced Morphology, Histology, and Embryology of Insects.** Credit one hour. Prerequisite, courses A 31 and A 30 or A 32 or equivalent. M W F, 8. Lectures, assigned reading, and reports. *Comstock 145.* Professor JOHANNSEN.

This course will be given if four or more students register for it. In the summer of 1936 it will deal with the embryology of insects.

**A 35. Histology of Insects.** Credit two hours. Must be preceded or accompanied by course A 31. Laboratory, fifteen actual hours a week, by appointment. *Comstock 270.* Professor JOHANNSEN.

Technique in histological methods as applied to insects. Laboratory fee, \$3.

**B 39. Special Problems with Animals.** Credit two or more hours. For description, see under **Zoology**.

## GENETICS

**A 40. General Genetics.** Credit four hours. Prerequisite, a beginning biological science, a course in physiology and permission to register. Courses in cytology and in taxonomic botany or zoology will be found helpful. Lectures, daily except Sat., 8. Laboratory, M W F, 1:40-4. Conferences to be arranged. *Plant Science 146.* Dr. DORSEY.

An introductory course designed to acquaint the student with the fundamental principles of heredity and variation. Discussions of simpler cases of inheritance, gene interaction, inheritance of sex, sex and gene linkage, quantitative inheritance, the genetics of inbreeding and outbreeding, cytoplasmic inheritance and mutation, with suggestions as to the relation of genetical principles to eugenics. Laboratory studies of hybrid material in plants and breeding experiments with the vinegar fly, *Drosophila*. Laboratory fee, \$3.

## HISTOLOGY AND EMBRYOLOGY

**S 26. Histology.** Credit four hours. No prerequisite, but previous work in biology, zoology, and botany or physiology is recommended. Lectures, daily except Sat., 12. The laboratory will be open every morning except Saturday. *Stimson.* Professor KINGSBURY, Dr. RAMSAY and Dr. SNOOK.

For students of biology or those preparing for medicine. The cell and cellular origin of the body; the structure and development of its component tissues. Each student will prepare or receive a series of typical microscopic preparations.

The courses in histology and embryology are given in the histological laboratories in *Stimson Hall*. The department is well equipped for instruction in both subjects, having a large and adequate supply of modern microscopical instruments and an extensive collection of demonstration material for both histology and embryology. Microscopes are furnished by the department. Consultation with the instructors previous to registration is advised. Laboratory fee, \$6.

**S 26a. The Organs.** Credit four hours. Opportunity will be afforded a limited number of students for a laboratory study of the histology of the organs. Mornings except Sat. *Stimson.* Dr. RAMSAY. Laboratory fee, \$6.

**S 27. Embryology of Vertebrates.** Credit four hours. Prerequisite a course in the histology of the tissues or a satisfactory equivalent in other biological work involving training in the use of the microscope. Lectures, daily except Sat., 9. The laboratory will be open every morning except Saturday. Professor KINGSBURY, Dr. RAMSAY and Dr. SNOOK.

For students of biology or those preparing for medicine. Preparation and study of embryological specimens from all the chief groups of vertebrates. Particular emphasis is placed on the embryology of the chick. The student also acquires a knowledge of special methods useful in embryological work. Laboratory fee, \$6.

### ORNITHOLOGY

**A 11. Ornithology.** Credit three hours. Lectures, M W F, 11. *Fernow 122.* Laboratory, M W, 1:40-4:30, or T Th, 1:40-4:30. *Fernow 210.* Field work, M W, or T Th, 5:30-8 a.m. Professor A. A. ALLEN, Dr. E. G. ALLEN, and Mr. KELLOGG.

This course gives an introduction to the study of birds and familiarity with the local species. The lectures cover such subjects as classification, migration, coloration, song, nest-building, eggs, care of young, methods of attracting birds, and their economic importance. The laboratory work with bird skins, nests and eggs gives an intimate knowledge of the birds of Eastern North America, their life histories and distribution, and familiarity with the use of manuals. The aim of the field work is the identification of birds by their songs and habits as well as by their plumage. Each student should be provided with field or opera glasses. Laboratory fee, \$3.

**A 111. Advanced Ornithology.** Credit three hours. Lectures, T Th, 11. *Fernow 122.* Laboratory, M W F, 1:40-4:30, and one three-hour period by appointment. *Fernow 212.* Professor A. A. ALLEN, Dr. E. G. ALLEN, and Mr. KELLOGG. Registration limited to 15 students. Prerequisite, Ornithology A 11 or its equivalent.

The structure and classification of the birds of the world; geographical distribution; field collecting; preparation of specimens, and natural history photography; the food and feeding habits of birds; museum and biological survey methods. Each student should be supplied with dissecting instruments and a camera. Laboratory fee, \$3.

### PLANT PATHOLOGY

**A 1a. Diseases of Plants and their Control.** Credit one to four hours. Prerequisite, permission to register. Lectures, three times a week and other times by arrangement. *Plant Science 336.* Laboratory, the completion of a minimum of five exercises for each credit hour, with personal conferences. Conferences by arrangement. Laboratory at the student's convenience. Professor MASSEY.

A fundamental course treating of the nature, cause, and control of plant diseases, illustrated by studies of the more common diseases of cultivated crops. The method of conducting the course enables the individual student to study diseases which are of particular interest to him. The work is designed to meet the special needs of teachers of agriculture in secondary schools, teachers of biology, and county agents, as well as undergraduates in the College of Agriculture. Laboratory fee, \$1.25 a credit hour; breakage deposit, \$3.

**A 4. Comparative Morphology of Fungi.** Credit four hours. For description, see under **Botany**.

**A 7. Mycology.** Credit four hours. For description, see under **Botany**.

### PSYCHOLOGY

**S 1. Elementary Psychology.** Credit two hours. Lectures and recitations, daily except Sat., 9. *GS C.* Professor WELD.

A general introduction to the psychological study of man from the experimental point of view. The course opens with a brief discussion of the nature of psychology, of the problems which psychology is called upon to face, and of the meth-

ods at its disposal for their solution. It then sets forth in order the facts and principles of psychological functioning. Textbook: Boring, Langfeld, and Weld, *Psychology; a factual textbook*.

**S 4. Advanced Psychology.** Credit two hours. Lectures and recitations, daily except Sat., 9. *Morrill 41.* Dr. FELDMAN.

Presupposes an elementary course. A presentation of the general field of psychology with emphasis upon recent contributions to the science. Textbook: Bentley, *The New Field of Psychology*.

**S 10. Social Psychology.** Credit two hours. Lectures, readings, and recitation, daily except Sat., 11. *Morrill 41.* Professor WELD.

An investigation from the psychological point of view of the relation between individuals, the nature of the social groups, and their influence upon each other. The attempt will also be made to find the relation between social psychology and certain aspects of Education, Sociology, Social Anthropology, Law, and History.

**S 15. Sane Living.** Credit two hours. Lectures, readings, and recitations, daily except Sat., 10. *Morrill 59.* Professor BENTLEY.

The human life-course; its hazards and its failures. Textbook: Bentley, *Keeping Sane in Society*.

**S 16. Applications of Psychology.** Credit two hours. Lectures, recitations, and readings, daily except Sat., 8. *Morrill 59.* Assistant Professor JENKINS.

A general review of the experimental and statistical evidence dealing with the applications of psychological methods and facts to problems in business and industry. Topics to be considered will include personnel, industrial selection, advertising and selling, and market research. Textbook: Jenkins, *Psychology in Business and Industry*.

**S 22. Psychology and Magic.** Credit two hours. Lectures, readings, and recitations, daily except Sat., 11. *Morrill 59.* Professor BENTLEY.

An account of magical views about life, destiny, disease, prophesy, and super-human abilities and skills. A distinction will be made between that which is reasonable and authentic and that which is based upon human wish, desire, and traditional belief.

**S 23. Psychology of Motivation.** Credit two hours. Lectures and recitations, daily except Sat., 8. *Morrill 41.* Dr. FELDMAN.

A review of the available knowledge of the government of man. The nature of motive; common human motives; ambiguous, recurrent, and long-range motives; the rôle of feeling and emotion; social pressure, suggestion, and hypnosis; psychoanalytic and other doctrines of motivation. Textbook: Young, *Motivation of Behavior*.

## ZOOLOGY

**S 20a. Introductory Zoology.** Credit three hours. Lectures, daily except Sat., 9. *McGraw 203.* Laboratory, first, third, and fifth weeks, M W F 1:40-4; second, fourth, and sixth weeks, M W, 1:40-4. *McGraw 104.* Professor REED and Dr. MEKEEL.

The scope, objective, and principles of animal biology based upon a study of the structural and physiological organization of an animal type viewed from the standpoint of the organism as a biological unit. Also an introduction to the basic phenomena of reproduction, development, heredity, and evolution. Laboratory fee, \$2.50

This course is the equivalent of the first term of Zoology I as given during the academic year.

**S 20b. Intermediate Zoology.** Credit three hours. Lectures, daily except Sat., 10. *McGraw 203.* Laboratory, first, third, and fifth weeks, T Th 1:40-4; second, fourth, and sixth weeks, T Th F, 1:40-4. *McGraw 104.* Professor REED and Dr. MEKEEL.

A study of the groups of animals, stressing the pathway of descent and the critical epochs thereof, kinships, classification, adaptations, behavior, and the zoology of the human species. Laboratory fee, \$2.50. Courses S 20a and S 20b may be taken simultaneously for six hours credit.

This is the equivalent of the second term of Zoology I as given during the academic year.

**B 21. Systematic Vertebrate Zoology and Ecology.** Credit four hours. Lectures, M T W Th, 1:40-2:30. Laboratory and field work, M T W Th, 2:30-5:30. *McGraw*. Several all-day trips are required. Occasionally a field trip, 5:30-8 a.m. or 5-8 p.m., may be substituted for the regular periods. Professor WRIGHT.

Lectures on fishes, amphibians, reptiles, birds, and mammals; their habits, life-histories, coloration, respiration, locomotion, reproduction, and adaptations; together with their classification, nomenclature, characters, and relationships. Laboratory study of the parts employed in the classification of these groups, with training in the identification of two hundred and forty North American species. Field work is partly to give practice in field observations and in ready identification of local vertebrates in their natural environment, and partly to introduce some ecological methods. Textbook: Jordan's *Manual of Vertebrates of the North-eastern United States*, new edition. Laboratory fee, \$4.50.

**S 22a. Invertebrate Zoology.** Credit four hours. Prerequisite, S 20 or an equivalent and permission to register. Daily except Sat., 9-12:30. *McGraw* 102. Lectures, field trips, laboratory work, and discussions will be arranged during these periods. The following phyla of animals are included: Protozoa, Porifera, Coelenterata, Platyhelminthes, Nemertea, Nematelminthes, Trochelminthes, Bryozoa and Brachiopoda. To be offered in alternate summers with S 22b. Assistant Professor YOUNG.

This course should provide a better foundation for the advanced students in the field of zoology or give to the teacher a knowledge of a larger variety of forms available for use in general courses, either in high schools or in colleges. It differs from the type of invertebrate course offered by marine biological laboratories in that stress is laid upon many species which may be secured alive away from the sea shore. Methods used in collecting and the study of habitats are the more important objectives of the field trips. Classification, structure and development are emphasized in the laboratory. Laboratory fee, \$3.

[S 22b. **Invertebrate Zoology.** Credit four hours. A similar course to S 22a but including the following phyla: Echinodermata, Annelida, Arthropoda, Mollusca and the pro-chordates. Not given in 1936.]

[S 23. **Vertebrate Zoology and Comparative Anatomy.** Not given in 1936.]

**B 39. Special Problems with Animals.** Credit two or more hours. Hours to be arranged. In registering for this course the name of the professor with whom the work is to be taken must be stated.

Students sufficiently prepared may arrange for the study of some problem or special topic. Such work may lie in the fields of general zoology, invertebrate zoology, systematic vertebrate zoology, comparative anatomy of vertebrates, ornithology, histology, embryology, general entomology, systematic entomology, economic entomology, or general biology. A member of the staff must supervise the work.

## GEOGRAPHY, GEOLOGY, AND METEOROLOGY

### GEOGRAPHY AND GEOLOGY

It is the purpose of this department to meet, primarily, the needs of teachers. A second aim is to provide courses of practical and cultural value to college students. The work embraces lectures, laboratory, and field instruction in physical and economic geography, and in the elements of geology. The environs of Cornell University are rich in phenomena of geographic and geologic interest. Field excursions, consequently, are made an especially important part of the work of this department in the Summer Session. The laboratories are well equipped with apparatus and illustrative material for instruction. The material includes teaching and reference collections of minerals, rocks, fossils, maps, photographs, models, and more than five thousand lantern slides. The lecture rooms and laboratories are in *McGraw Hall*.

Students planning to take work in the department should, if possible, register for courses on Monday, July 6, at the Drill Hall.

#### LECTURE COURSES IN GEOGRAPHY AND GEOLOGY

**S 1. Physical Geography.** Credit two hours. Daily except Sat., 9. *Geological Lecture Room, McGraw* (first floor, south end). Professor VON ENGELN.

An introductory course in physical geography, including discussion of the nature and form of the continents; the structure and development of the relief of the land; the physiographic cycle in humid and arid regions; glaciers; the glaciation of North America; the elements of oceanography.

The lectures are illustrated by lantern slides, maps, models, and charts. Students registering in course S 1 are advised to take also the related courses S 9 and S 10.

**S 2. Economic Geography.** Credit two hours. Daily except Sat., 11. *Geological Lecture Room, McGraw*. Professor VON ENGELN.

The effect of geographic factors on the production and distribution of commodities. Discussion of the origins and regional background of industry and commerce; the volume, extent, and utilization of important products and resources; location and growth of cities. Recommended for teachers who wish broad training in regional geography.

**S 5. Geology.** Credit two hours. Daily except Sat., 10. *Geological Lecture Room, McGraw*. Assistant Professor BURFOOT.

An introductory course in geology, consisting of lectures and readings in textbook upon the following topics: origin of the earth; geologic history of the earth, materials of the earth's crust and their arrangement, as well as the forces modifying them; vulcanism, earthquakes, etc.; development of life on the earth.

The lectures will be illustrated with lantern slides, models, maps, and specimens. Students registering for this course are urged to take the laboratory course S 9 and, if possible, course S 10. Credit for Geology course 100, regular session, will be allowed only for successful completion of all three courses S 5, S 9, S 10.

#### LABORATORY AND EXCURSION COURSES IN BOTH GEOGRAPHY AND GEOLOGY

**S 9. Geology, Laboratory Course.** Credit one hour. W F, 2-4. *General Geological Laboratory, McGraw* (first floor, middle entrance). Assistant Professor BURFOOT and Dr. PARKER.

This course is designed to supplement courses S 1 and S 5. A study will be made of the more common structural phenomena; of the interpretation and uses of topographic and geological maps; of characteristic life forms developed in different geological periods; and of the more common rocks and minerals. Short field excursions may be taken to collect both rock specimens and fossils. Laboratory fee, \$1.

**S 10. Geography and Geology, Field Course.** Credit one hour. This course should be elected by all those registering in course S 1 or S 5. With courses S 1 and S 9 it affords a comprehensive course in physical geography; with courses S 5 and S 9 it will give a similarly broad training in elementary geology, as the dynamic phases of geology are emphasized on the excursions. Mimeographed outlines of the excursions are to be secured from one of the bookstores by each student desiring credit. See also a pamphlet, obtainable in Ithaca, on *The Geography and Geology of the Cornell Region*. Professor VON ENGELN, Assistant Professor BURFOOT and Dr. PARKER.

Students desiring credit or certificates of attendance must register in S 10 and will be given preference in accommodations.

Those desiring University or entrance credit must take field notes and hand in written reports. Excursions 1, 2, 3, 4, 5, are required of all students in the course, and in addition for one hour's credit they must take any two of the following four all-day excursions: 6, Taughannock; 7, Niagara; 8, Northern Pennsylvania; and 9, Watkins Glen.

Meeting place and time announced in mimeographed outlines or by bulletin. Meet for first excursion, Monday, July 13, at McGraw Hall, 2 P.M. Excursions 1-5, Monday afternoons; 6, 7, 8, 9, all day. On those excursions to which a cost is attached for bus or railway fares, persons wishing to go must register at the department and secure tickets in advance of the date of the trip. For bus fare on the first excursion, bring 10 cents. The total cost of the trips will be from \$7 to \$10, according to the choices made. Announcements regarding field trips are posted on the middle door of *McGraw Hall* and all arrangements for reservations and tickets are made in the Geology Department Office, middle entrance, *McGraw Hall*. The trips are open to others besides the members of the excursion class as far as accommodations are available. Stops are made at points of interest, explanations given, questions asked, and discussion invited.

#### OUTLINE OF EXCURSIONS: COURSE S 10

##### *Monday Afternoons*

1. **Cascadilla Creek.** To study the origin and nature of sedimentary rocks, also processes of erosion, transportation, deposition, and cementation. A study in detail of one of the large gorges and its special features. July 13.
2. **Snyder Hill.** By bus. No tickets; bring 25 cents in change for bus fare. To become acquainted with the lie of the land about Cornell, to learn the place names and nature of the broader physiographic features, studying the maturely dissected plateau and processes of weathering. The top of the hill is a vantage point from which a good view of the lake and the land for miles to the north, east, and west may be had. July 20.
3. **Portland Point.** By bus. To study rock structure; intrusion of igneous rocks into sedimentary formations; rock-folding and small scale faulting and associated phenomena; vein-formation; fossil content of strata; economic utilization for cement. July 27.
4. **Enfield Gorge and Falls.** By bus. To study the relations of pre-glacial and hanging valleys and the postglacial and interglacial gorges, their origin and features. Joint-plane guidance of stream courses. Ride to the head of the gorge, and walk through it to the lower end past the crest of Lucifer Falls. Enfield is perhaps the most picturesque of the gorges in the Cornell region. August 3.
5. **Terminal Moraine, Kames, Esker and Outwash Deposits.** By bus. Varna, Freeville, and South Cortland. To study a massive morainic loop and the glacio-fluvial deposits which are well developed in these parts. August 10.

##### *All-day Excursions*

6. **Taughannock Gorge and Falls.** By bus. Secure tickets in advance. To study the upland physiography of the region, especially the Portage escarpment, and the deep gorge and falls of Taughannock, one of the highest straight falls east of the Rockies. Luncheon at the foot of the falls. July 18.
7. **Niagara Falls and Gorge.** By train and bus. Physiography of north-western New York; physiography and geology of Niagara Falls and Niagara Gorge. July 26.
8. **Northern Pennsylvania.** By bus. Geology of a coal mine and the physiography of the Susquehanna valley at Wyalusing Rocks. Stops will be made to study Appalachian structure, folds and faults, and the stratigraphy of a complete section from the Portage beds of the Devonian through the Pottsville conglomerate of the Pennsylvanian. An exceptionally fine scenic trip over the Roosevelt Highway through southern New York and northern Pennsylvania. August 1.
9. **Watkins Glen.** By bus. Watkins Glen is one of the most beautiful scenic spots in the country. The party will study the gorge, its pot holes, and its falls in detail; and consider its relation to the Seneca Lake valley in comparison with the conditions at Ithaca in relation to the Cayuga valley. Luncheon at the head of the gorge. August 8.

FIELD COURSE

**S 21. Summer Field School in Geology.** Intended for students who desire to study geology in the field. The camp is located in central Pennsylvania near Tyrone and instruction covers a period of six weeks, from June 15 to July 25. Six hours of college credit are given upon successful completion of the course. Fixed expenses, including the regular tuition fee of \$50, are approximately \$150. Registration is limited to men. Professor NEVIN.

The region selected is especially suitable for field work in geology. Sedimentary rocks from Cambrian to the Coal Measures are represented, with a total thickness of some 27,000 feet. Folds and faults are extensively developed, and their effect on the topography is very marked. Instruction includes reconnaissance and detailed mapping. The course, open to students with either elementary or advanced training in geology, will be conducted to meet the individual needs of the student. A special circular containing detailed information will be furnished upon request.

METEOROLOGY

**A 1. Meteorology.** Credit two hours. Lectures and discussions, daily except Sat., 10. *Plant Science* 143. Professor MORDOFF.

This course is adapted to the needs of teachers and students in subjects of which the weather is an important factor, particularly teachers of general science, physical geography, and agriculture. It is designed to acquaint the student with the laws governing the primary and secondary circulation of the atmosphere, and with the development, progression, and conditions that attend cyclones, tornadoes, and other atmospheric phenomena. Attention is given to the principles and practice of weather forecasting from weather maps and from local observations.

**A 2. Meteorology, Laboratory Course.** Credit one hour. W F, 1:40-4, or other periods to be arranged. Must be accompanied by Course A 1. *Plant Science* 114. Professor MORDOFF.

The work consists in the study of the principal weather and climatic elements with the aid of maps, charts, and instruments. The various meteorological instruments will be studied, as well as the methods of taking and recording the observations. Opportunity will be given the student for making practice forecasts.

**A 3. General Climatology.** Credit one hour. Must be accompanied or preceded by Course A 1. Lectures and discussions, M W F, 8, or other periods to be arranged. *Plant Science* 114. Professor MORDOFF.

A course designed to give a general knowledge of climatology and of the various climates of the United States. It is planned especially to meet the needs of teachers of general science, physical geography, and agriculture.

ASTRONOMY, CHEMISTRY, PHYSICS, AND  
MATHEMATICS

ASTRONOMY

**S 1. General Astronomy.** Credit two hours. Daily except Sat., 8 or 10. *Rockefeller* 155. Four evening observing periods during the term at the *Observatory*. Professor BOOTHROYD.

An introductory descriptive course illustrated by models and lantern slides. Those taking the course are advised also to take course S 2 or S 182. Advance registration is necessary for admission to the eight o'clock lecture period.

**S 2. Laboratory Astronomy.** Credit one hour. T Th, 2-4, and one clear T or Th evening in each of the first five weeks. *Observatory*. Professor BOOTHROYD.

This course must be preceded or accompanied by course S 1.

Observations to acquaint the student with the constellations and the most important facts about planets, sun and stars, together with laboratory exercises dealing with time seasons, eclipses, meteors, and variable stars.

**S 182. Elements of Field Astronomy.** Credit two hours. Lectures first three weeks with course S 1. Laboratory T Th, 2-4, and first observation period with those in course S 2. Also three late afternoons for surveyor's transit and sextant observations on the sun and one evening for surveyor's transit observations on Polaris. *Observatory.* Professor BOOTHROYD.

This course gives the student training in the use of the surveyor's transit and sextant in problems of surveying and navigation requiring the determination of time, latitude, longitude and azimuth.

Courses S 1 and S 2 offer an introduction to astronomical ideas and methods and give a good background for teachers who may wish to prepare more thoroughly for teaching general science or geography.

Those who take both courses, S 1 and S 2, and those who take courses S 1 and S 182 may count the three hours toward fulfilling half of the requirement of Group 4 in the College of Arts and Sciences.

**Demonstrations at the Observatory.** A series of lectures illustrated by actual observations with the 12-inch equatorially mounted telescope when weather permits, and by diagrams and astronomical photographs at other times, will be offered on Monday, Wednesday, and Friday evenings. These lectures and demonstrations carry no credit except for those registered in course S 1.

During the first and last weeks of the session these demonstrations will be general and open to all Summer Session students. During the second to fifth weeks a connected series of four lectures will be given which will give a background of astronomical knowledge sufficient to enable one to more fully understand and appreciate astronomical phenomena.

Those taking course S 1 are admitted by class cards. Ninety-nine other tickets will be given out each week, from the second week through the fifth. Holders of these tickets will have the advantage offered by such a connected series of lectures and observations.

Tickets may be obtained without charge at the Summer Session Office, 245 *Goldwin Smith Hall.*

## CHEMISTRY

The courses announced below correspond entirely or in part with courses given during the regular sessions of the University. For regular students the requirements for admission to the various courses will be the same as during the year.

Teachers may be admitted to any course for which their general training or experience may be considered to prepare them. Efforts will be made to meet the individual needs of teachers by arranging and modifying the work as far as possible so as to fulfill the particular requirements in each case.

All courses in Chemistry are given in the *Baker Laboratory of Chemistry.*

In some laboratory courses a deposit to cover the usual laboratory fee and also breakage and other variable items of expense is charged. At the end of the course the unexpended balance is returned to the student. In other courses a laboratory fee of fixed amount is charged. The amounts of the deposits and laboratory fees are indicated in the descriptions of courses.

**S 101. General Chemistry.** Credit three hours. Lectures, daily except Sat., 8, and M W, 9. *Main Lecture Room.* Professor BROWNE and Dr. SHERK.

The lectures deal with the fundamental theories and laws of chemistry, and with the more common elements and their compounds. They are profusely illustrated by experiments. Chemistry S 101 and S 105 must be taken simultaneously unless permission is obtained from the Department of Chemistry to take either course alone.

**S 105. General Chemistry.** Credit three hours. Recitations and laboratory practice.

Laboratory, daily except Sat., 10-1. *Rooms 177 and 150.* Professor BROWNE and Mr. FRIERSON. A series of experiments designed to illustrate the fundamental laws of chemistry and to acquaint the student with the properties of the principal elements and their compounds.

Recitations, T Th F, 9. *Room 22.* Professor BROWNE. The recitations deal with the subject matter of the lectures and with the experimental work in the



laboratory and afford thorough drill in the solution of chemical problems. Deposit, \$20.

**S 106b. General Chemistry.** Lectures, recitations, and laboratory practice. Given the last three weeks of the Summer Session at hours to be arranged. This course is limited to students from the College of Engineering of Cornell University, who have completed course 106a. Professor BROWNE and assistants.

**S 205. Introductory Qualitative Analysis.** Credit three hours. Must be taken with course S 206. Lectures and recitations, daily except Sat., 8, and T Th, 11. *Room 206.* Dr. BURFORD.

A study of the application of the theories of general chemistry to the systematic separation and detection of the common elements and acid radicals.

**S 206. Introductory Qualitative Analysis.** Credit three hours. Must be taken with course S 205. Laboratory, daily except Sat., 9-1. *Room 252.* Dr. BURFORD.

A study of the properties and reactions of the common elements and acid radicals; the qualitative analysis of a number of solutions and solid compounds. Deposit, \$25.

**S 210. Introductory Qualitative Analysis.** Shorter course. Lectures and laboratory practice. Credit three hours. Lectures, daily except Sat., 8. *Room 206.* Laboratory, daily except Sat., 9-12. *Room 252.* Dr. BURFORD.

The properties and reactions of the common elements and acids, and their detection in various liquid and solid mixtures. Deposit, \$20.

**S 225. Introductory Quantitative Analysis.** Shorter course. Lectures and laboratory practice. Credit three hours. Lectures, M W F, 11. *Room 206.* Professor NICHOLS. Laboratory, daily except Sat., 8-11. *Room 252.* Professor NICHOLS and Dr. BURFORD.

A study of the fundamental principles of gravimetric and volumetric analysis, and the analysis of various substances by these methods. Deposit, \$20.

**S 230. Advanced Quantitative Analysis.** Recitations and laboratory practice. Credit three hours. Laboratory, daily except Sat., 8-1. *Room 252.* Professor NICHOLS and Dr. BURFORD.

The calibration of weights and volumetric apparatus; the analysis of ferrous and non-ferrous alloys, silicates, and organic substances by various gravimetric, volumetric, and combustion methods. Fee variable.

**S 275. Quantitative Microanalysis.** Credit three or more hours. Daily except Sat., 8-5. *Room 282.* Professor NICHOLS and Mr. McNALL.

Laboratory practice in typical methods of both organic and inorganic quantitative microanalysis. Fee, \$20.

**S 305. Introductory Organic Chemistry.**

A. Credit three hours. Lectures and written reviews. Daily, 8, throughout the session, and also daily, 9, during the first three weeks. *Room 207.* Professor JOHNSON.

The lectures discuss systematically the more important compounds of carbon, their occurrence, methods of preparation, reactions, and uses. The work covered is equivalent only to the first half of the year course. Students who wish a complete course must register in Chemistry S 375.

**S 310. Introductory Organic Chemistry.**

A. Credit one to three hours. Laboratory practice and oral reviews. Open to those who have had or who are taking S 305 A. Hours to be arranged, in the mornings. Mr. STEVENSON. *Room 250.* Deposit, \$35.

B. Credit one to three hours. Laboratory practice and oral reviews. Open to those who have had S 305 A and S 310 A. The course is a continuation of Part A. Hours to be arranged, in the mornings. Mr. STEVENSON.

The student prepares a number of typical compounds and familiarizes himself with their properties, reactions, and relations. Deposit, \$35.

**S 320. Advanced Organic Chemistry.** Credit two or more hours. Laboratory practice at hours to be arranged, in the mornings. Professor JOHNSON.

An advanced course in the preparation of organic compounds, involving the use of the more difficult methods and of the less common reagents. Fee variable.

**S 375. Introductory Organic Chemistry.** Shorter course. Lectures and written reviews. Daily, 8-10. *Room 207.* Professor JOHNSON.

A shorter course in organic chemistry, designed for students in home-economics, pre-medical, biological, and agricultural curriculums. Credit four hours for lectures and written reviews. Laboratory practice. Credit one or two hours. Hours to be arranged in the mornings. *Room 250.* Fee variable.

**S 401. Principles of Physical Chemistry.**

A. Credit three hours. Lectures, daily except Sat., 8. *Baker 7.* Laboratory, seven actual hours a week at times to be arranged; laboratory open to students M T W Th F, 8-1. *Baker 1.* Professor BRIGGS and assistant.

A systematic presentation of the principles of physical chemistry. The subject matter includes: gases, liquids, and solids; chemical equilibrium in homogeneous and heterogeneous systems; the elements of thermochemistry; and vapor pressure, osmotic pressure and the elementary theory of solution.

If additional laboratory practice is desired, the student may elect one or more hours in Course S 465. Deposit, \$15.

B. Credit three hours. Lectures, daily except Sat., 9. *Baker 7.* Laboratory, seven actual hours a week at times to be arranged, laboratory open to students M T W Th F, 8-1. *Baker 1.* Professor BRIGGS and assistant.

A continuation of Part A; may be taken with Part A by permission of the instructor. The subject matter includes: the theory of solution; ionic equilibria; electrolysis; reaction velocity, catalysis and photochemistry; and colloid chemistry.

If additional laboratory practice is desired, the student may elect one or more hours in Course S 465. Deposit, \$15.

**S 405. Introductory Physical Chemistry.**

A. Credit three hours. Lectures, same as for Course S 401 A, with two additional lectures a week at hours to be arranged. Professor BRIGGS and Mr. MILLER. A knowledge of the calculus and of elementary organic chemistry is prerequisite to this course.

A more detailed presentation of the principles of modern physical chemistry. The subject matter includes: gases, liquids, and solids; chemical and physical equilibrium in homogeneous and heterogeneous systems; the Mass Law, theorem of Le Chatelier and the Phase Rule; elementary thermochemistry and thermodynamics; and the theory of solution.

B. Credit three hours. Lectures, same as for Course S 401 B, with two additional lectures a week at hours to be arranged. Professor BRIGGS and Mr. MILLER.

A knowledge of the calculus and of elementary organic chemistry is prerequisite to this course.

A continuation of Part A. The subject matter includes: the theory of solution; ionic equilibria and the concept of activity; chemical kinetics and catalysis; photochemistry; elementary electrochemistry; and written problems in physical chemistry.

**S 465. Laboratory Practice in Physical Chemistry.** Credit one to three hours. Laboratory periods to be arranged. Professor BRIGGS and Mr. MILLER.

This course is designed to afford opportunity for additional laboratory practice in introductory physical chemistry (equivalent to Chemistry 410, either term) or for special laboratory practice in physical chemistry, colloid chemistry, or electrochemistry. Fee variable.

**S 530. Introductory Chemical Microscopy.** Lectures and laboratory practice. Credit three hours. Lectures, M W F, 10. *Room 377.* Laboratory, M W F, 11-1, T Th, 10-1. *Room 378.* Professor MASON and Mr. ROSEVEAR.

Microscopes and their accessories, as applied to problems in chemistry and technology. Micrometry; quantitative analytical methods; optical properties of crystals and other doubly refractive materials; physico-chemical studies; illumi-

nation, photomicrography, and ultramicroscopy; recognition of textile and paper fibers. Laboratory fee, \$5.

**S 535. Advanced Chemical Microscopy.** Laboratory practice. Credit two or three hours. Prerequisite, course S 530. Laboratory periods and conference hours to be arranged. Room 378. Professor MASON.

Practice in the examination and analysis of inorganic substances containing the more common elements, with special reference to rapid qualitative methods and to the analysis of minute amounts of material.

Students not desiring University credit, who wish to secure a working knowledge of Chemical Microscopy in the shortest possible time, may arrange with the instructor to cover the parts of both of the above courses which best meet their needs. Laboratory fee, \$5.

**S 195, S 295, S 395, S 495, S 595. Research.** Credit one to six hours. Senior chemists, and others by special permission, may elect research in the fields of Inorganic, Analytical, Organic, or Physical Chemistry, or Chemical Spectroscopy, or Chemical Microscopy, under the direction of the respective members of the staff of instruction. Fee variable.

## MATHEMATICS

Each teacher will have a daily office hour for consultation with students. It is urged that this opportunity be utilized by all concerned.

In the following list, courses S 1 to S 5b are the equivalent of courses having the same numbers in the Announcement of the College of Arts and Sciences for 1936-37.

Courses S 1, S 2, S 3, are planned for those teachers in the secondary schools who wish to review these subjects. They are equivalent to the advanced entrance requirements of Cornell University and of the College Entrance Examination Board. They presuppose a ready knowledge of elementary and intermediate algebra and of plane geometry.

Students taking S 5a or S 5b are requested to take no other University work during the session without special permission from the department of Mathematics.

**S 1. Solid Geometry.** Credit three hours. Daily, 8. *White B 2.* Dr. BLACK. (Office hour, 9, *White B 4.*)

**S 2. College Algebra.** Credit three hours. Daily, 11. *White 2.* Assistant Professor JONES. (Office hour, 10, *White 4.*)

**S 3. Trigonometry.** Credit three hours. Daily, 10. *White 9.* Dr. RANDOLPH. (Office hour, 11, *White 11.*)

**S 5a. Analytic Geometry and the Calculus.** (First term's work). Credit five hours. Daily, 8 and 11. *White 1.* Assistant Professor LAWRENCE. (Office hour, 10, *White 3.*)

**S 5b. Analytic Geometry and the Calculus.** (Second term's work). Credit five hours. Daily, 8 and 11. *White 5.* Assistant Professor AGNEW. (Office hour, 10, *White 8.*) *White 21.* Dr. SPENCER. (Office hour 10, *White 23.*)

**S 20. Teachers' Course.** Credit two hours. Daily except Sat., 9. *White 10.* Professor CARVER and Assistant Professor HULSE. (Office hours, Professor CARVER, 10, *White 12*; Professor HULSE, 11, *GS 251.*)

The course will treat certain selected topics in the algebra and geometry of the secondary school curriculum; such as the number system, the meaning and existence of solutions of equations and sets of equations, geometry as a logical system, and constructions with ruler and compasses. A part of the time will be devoted to a critical study of the content and organization of secondary mathematics courses and programs.

## ADVANCED COURSES

**S 21. Theory of Numbers.** Credit three hours. Daily, 11. *White 6.* Professor HURWITZ. (Office hour, 10, *White 8.*)

Properties of divisibility, linear and quadratic congruences, primitive roots, and selected topics.

**S 42. Advanced Calculus.** Credit three hours. Daily, 12. *White 6.* Professor HURWITZ. (Office hour, 10, *White 8.*)

A study of the processes of the calculus; definitions and properties of limits, continuity, derivatives, and integrals.

**S 45. Functions of a Complex Variable.** Credit three hours. Daily, 9. *White 9.* Dr. RANDOLPH. (Office hour, 11, *White 11.*)

An introductory course on single-valued analytic functions, chiefly from the standpoint of Cauchy and Riemann.

**S 61. Projective Geometry.** Credit three hours. Daily, 10. *White B 2.* Dr. BLACK. (Office hour, 9, *White B 4.*)

The principles underlying projective forms of the first and second degrees will be discussed. Although no knowledge of mathematics beyond plane geometry will be presupposed, additional training is highly desirable.

**S 62. Analytic Projective Geometry.** Credit three hours. Daily, 8. *White 2.* Assistant Professor JONES. (Office hour, 10, *White 4.*)

Homogeneous point-coordinates and line-coordinates will be defined for a plane, and projective properties of plane figures will be studied by means of these coordinate systems.

#### READING AND RESEARCH COURSES

In addition to the preceding courses opportunities are offered to graduate students to participate in informal work by reading and research under the direction of members of the Department of Mathematics. A regularly registered student may, by arrangement, obtain academic credit for any of this work; the number of hours of credit will depend on the amount of work done. Students interested in such directed reading or research may consult any member of the staff.

**S 100. Topics in Algebra.**

**S 100. Topics in Analysis.**

**S 100. Topics in Geometry.**

**S 100. Topics in Applied Mathematics.**

#### PHYSICS

**Demonstration Lectures.** A series of experimental demonstrations covering the entire field of physics. Little time will be spent on the development of the related theory, this being left for the classroom work of courses S 7-S 12, of which these lectures are a part. Teachers may find in these demonstrations valuable suggestions for their own work.

Mechanics, sound, and light, M W F, 8; heat, magnetism, and electricity, T Th S, 10. Dr. BACHER and Assistant Professor COLLINS.

**S 7, S 11. Introductory Experimental Physics.** Credit three hours and four hours respectively. Demonstration lectures, recitations, and laboratory work covering mechanics, sound, and light. A computing period of three hours is also included for S 11.

Lectures, M W F, 8, *Rockefeller A.* Recitations, T Th S, 8; written quiz, F, 12; S 11 computing period, Th, 1:40-4:30. *Rockefeller 103.* Dr. BACHER.

Laboratory open daily except Sat., 1:40-4:00. *Rockefeller 252.* Fourteen experiments will be performed. Assistant Professor GRANTHAM. Laboratory fee, \$5.

**S 8, S 12. Introductory Experimental Physics.** Credit three hours and four hours, respectively. Demonstration lectures, recitations and laboratory work covering heat, electricity, and magnetism. A computing period of three hours is also included for S 12. Course S 8 must be accompanied by course S 7 or preceded by a study of mechanics in high school or college.

Lectures, T Th S, 10. *Rockefeller B.* Recitations, M W F, 10; written quiz, Th, 12. *Rockefeller 103.* S 12 computing period, F, 1:40-4:30. *Rockefeller 301.* Assistant Professor COLLINS.

Laboratory open daily except Sat., 1:40-4:00. *Rockefeller* 252. Fourteen experiments will be performed. Assistant Professor GRANTHAM. Laboratory fee, \$5.

**S 70. Introduction to Mathematical Methods of Physics.** Credit three hours. Given in cooperation with the Department of Mathematics. Prerequisites, introductory college physics and trigonometry. Daily except Sat., 11 and Sat., 10:30-1:00. *Rockefeller* 107. Professor GIBBS.

A review of selected topics in physics in which the use of analytical geometry and calculus is generally essential. The fundamental mathematical concepts, symbols and procedures will be introduced as needed. Extensive practice in the applications of these to the solution of physical problems will be provided. Stress will also necessarily be laid upon a thorough understanding of the numerous physical principles treated. The course is planned to supply the inexperienced student with a sufficient working knowledge of mathematics and practice in its application in physics to enable him to pursue understandingly those studies required for a Master's degree in physics. The course will also be suitable for Master's degree candidates and others who at some time have had a course in analytical geometry and calculus but who now feel a need for some review of those subjects and of certain related physics as a preparation for further study of physics.

[**S 72. Molecular Physics.** Credit two hours. Prerequisites the same as in Physics S 73. Not given in 1936, planned for 1937.

Mechanics of a particle, surface tension, elasticity, kinetic theory, molecular energies, specific heats, molecular spectra.]

**S 73. Optics and Spectroscopy.** Credit two or three hours. Prerequisites, Physics S 7 and S 8 and Mathematics S 3 or their equivalent. Those not prepared to use the calculus should take S 70 simultaneously with S 73. Daily except Sat., 9, for 2 hours credit; which combined with suitable laboratory work in the afternoon may be taken as a substitute for physics 22 of the regular year, or combined with a computing period devoted to a study of spectroscopic data, S, 8:00-10:30, may be taken for a credit of three hours. *Rockefeller* 107. Professor GIBBS.

Laws of reflection and refraction and their application to optical instruments, dispersion, interference and polarization phenomena, laws of radiation, the nature and fundamental laws of atomic and molecular spectra. In the computing period for the third hour of credit a few typical spectra will be studied and analyzed in detail.

[**S 75. Electricity and Magnetism.** Credit three hours. Prerequisites the same as in Physics S 73. Not given in 1936, planned for 1937.]

**S 76. Electrical Conduction and Related Phenomena.** Credit two hours. Prerequisites, Physics S 7, S 8 and Mathematics S 3, or their equivalent. Those not prepared to use the calculus should take S 70 simultaneously with S 76. Daily except Sat., 8. *Rockefeller* 104. Assistant Professor SMITH.

A study of electrical conduction in metals, electrolytes, and gases and related phenomena such as the emission of electrons and ions from metals and the photoelectric effect.

**S 81. Significant Developments in Physics during the Period 1895-1935.** Credit two hours. Prerequisite, a second year course in college physics or simultaneous registration in such a course. Daily except Sat., 10. *Rockefeller* 109. Dr. BACHER.

An introductory survey and study of the significant developments in physics since 1895; including such topics as radioactivity, x-rays, photoelectric effects, atomic structure, quantum theory, atomic and molecular spectra, critical potentials, thermionics, relativity, isotopes, cosmic rays and nuclear physics.

**S 83. Intermediate and Advanced Laboratory Physics.** Credit one to three hours. Prerequisite, an introductory college course in Physics. The laboratory will be open daily except Saturday from 1:40-4:00. *Rockefeller* 301. Assistant Professors COLLINS and SMITH. Laboratory fee, \$5.00 for each laboratory credit hour.

The experiments will be chosen to meet the needs and previous experience of the student. For those students of less experience the emphasis will be placed on physical principles and a wide range of topics provided. Experiments in mechanics, properties of matter, heat, sound, light, and electricity may be performed. For the student who has had considerable experience in physical measurements, apparatus and equipment are available for work in a wide variety of fields. The student will work independently on a group of experiments selected to meet his individual requirements. Such experiments as the following may be performed: measurement of the ionization potential of vapors, charge on the electron, ratio of charge to mass of the electron, electron lens measurements, ratio of charge to mass of ions, electron diffraction, measurement of specific heat at low temperatures, the study of photoelectric and thermionic emission, high vacuum technique, vacuum tube characteristics, resonance of high frequency circuits, emission and absorption, x-ray spectra, optical spectroscopy, physical optics and electrical measurements.

**S 90. The Teaching of Physics in Secondary Schools.** Credit two hours. Lectures and discussions. Daily except Sat., 9. *Rockefeller* 105. Assistant Professor HOWE.

Students taking this course will be expected either to have had teaching experience in Physics, to have completed a college course equivalent to Physics S 7 and S 8, or to elect the work of these courses in conjunction with Physics S 90. Examinations covering the subject matter of an introductory course will be given to students registered for credit.

A critical review of subject matter used by the high school teacher; organization and presentation of subject matter; the application of mathematics in elementary problem analysis; the selection of apparatus for demonstration and laboratory work.

Personal conferences will be arranged for the discussion of the individual teacher's problems. Teachers are advised to bring with them a copy of the textbook they are using.

**S 302. Introduction to Quantum Mechanics.** Credit two hours. Prerequisites, intermediate Mechanics, and Electricity and Magnetism. Daily except Sat., 11. *Rockefeller* 104. Assistant Professor SMITH.

A development of the fundamentals of quantum mechanics and their application to selected atomic phenomena.

**S 400. The Elementary Constituents of Matter and Radiation.** Credit two hours. Prerequisites, thorough general courses in physics and calculus. Daily except Sat., 12. *Rockefeller* C. Professor RASETTI.

An introduction to the properties of the elementary constituent particles of matter and their interaction with radiation: The Planck radiation formula, X- and gamma rays, scattering, absorption and pair production, radioactivity, alpha and beta decay, artificial disintegration, the neutron, isotopes, mass defects and spins of nuclei, the constitution of nuclei and interaction between their constituent particles.

**S 415. Special Topics for Investigation.** Students who are prepared to profit by the use of the library and laboratory facilities of the Department in the study of some special topic or in investigation will be given an opportunity to do so. This work may be taken in connection with or independently of any of the above courses and will be under the direction of one or more members of the staff, with whom frequent conferences should be arranged. Credit varies with the nature and amount of work done. Students interested are advised to correspond with Professor GIBBS.

**S 500. Seminar on Nuclear Physics.** Credit one hour. Two or three meetings each week at hours to be arranged. Professor RASETTI.

The discussions will deal chiefly with topics of nuclear physics such as quantum levels in nuclei, nuclear effects in optical spectra, interaction of neutrons with matter, effects produced by cosmic rays.

**Colloquium.** Reports and discussions of recent work in physics. M, 4. *Rockefeller* C.

**Symposium.** A symposium on Nuclear Physics will be held in Ithaca, July 2, 3, and 4. For further details, see page 25.

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Courses 70 to 83 are suitable for teachers and others as candidates for a Master's degree.

Courses 302 to 500 are intended for those who have already had some graduate training in Physics. Similar courses covering other topics will be offered in subsequent years.

## ARCHITECTURE

The College of Architecture offers in the Summer Session a combined course stressing the interrelation between Architecture and Landscape Architecture. This course is open to a limited number of students who have had three or more years of Design, in either Architecture or Landscape Architecture, or equivalent experience. Registration for this course will take place on June 27 and the last session will be on August 8.

**S 115. Architectural and Landscape Design.** Maximum credit of six hours. Registration in other Summer Session courses will be by permission only.

The plan for the course includes three major problems, three one-day problems, at least one field trip devoted to the study of the Finger Lakes Parks, and seminars devoted to the study of parti and plant materials.

The problems chosen for study will be in the field common to the two professions and all students will do the same work.

The Faculty will consist of Professor SEYMOUR and Professor LAWSON of Cornell. They will be assisted from time to time by other members of the Cornell Faculty, by Mr. ERIC GUGLER, Architect, of New York, and by Mr. MICHAEL RAPUANO, of the firm of Vitale and Geffert, Gilmore D. Clarke, and Rapuano, Landscape Architects, New York City.

Application for admission should be made as early as possible. In the case of a student now or recently enrolled in a school of Architecture or Landscape Architecture the letter of application should be accompanied by a statement from the head of the school to the effect that the applicant is in good standing and qualified to undertake advanced work in Design. Applications will be considered in the order of their receipt.

Further information will be furnished on request. All correspondence should be addressed to the College of Architecture, Cornell University, Ithaca, New York.

## ENGINEERING

The courses in engineering described below are equal in character to corresponding courses given in the COLLEGE OF ENGINEERING during the regular session. They will be accepted for credit towards graduation by the several schools of the college so far as they apply to the prescribed work of the school concerned. Students in the College of Engineering who may desire to offer work done in the Summer Session toward graduation should consult the Director of the school in which they are regularly registered before registering in the Summer Session. Others may obtain information concerning these courses by applying to the Secretary of the College of Engineering.

Additional courses in Structural Engineering and courses in Hydraulics may be arranged to meet the needs of graduate students.

## MECHANICS OF ENGINEERING

The following courses in Mechanics of Engineering are open to students from other universities, subject to the same requirements for admission as are made for Cornell students. See the Announcement of the College of Engineering for more detailed description of Courses 221 and 223. S 221, S 221A, and S 223, will be given only if enough students register for the courses.

**S 221. Mechanics.** Mechanics of Materials. One section. Credit four hours. Equivalent to C.E. 221. Prerequisite, course 220 or the equivalent. Recitations, daily except Sat., 8 and 11; and one computing period a week. See S 221A. Professor GEORGE. Will be given only if enough students register for the course.

**S 221 A. Mechanics Laboratory.** Equivalent to C. E. 221 A. Credit one hour. Must be taken with S 221. Hours to be arranged. Will be given only if enough students register for the course. Professor GEORGE.

**S 223. Engineering Problems.** Credit two hours. Equivalent to C. E. 223. Five computing periods a week. Hours to be arranged. Will be given only if enough students register for the course. Professor GEORGE.

**S 3M 22. Strength of Materials.** Credit three hours. Daily, 8, Sat., 10, Fri., 1:40 to 4. Prerequisite, Theoretical and Applied Mechanics, 3M 21, or equivalent. *West Sibley 307.* Professor CORNELL.

Stress, strain; strength and elastic properties of materials in tension, compression and shearing; riveted joints; torsion of shafts; helical springs; shear; moment, safe loading and deflection of simple beams; eccentric loads; columns; impact loads.

**S 3M 23. Hydraulics.** Credit two hours. Daily except Sat., 10. Prerequisite, Theoretical and Applied Mechanics, 3M 21, or equivalent. *West Sibley 303.* Professor CORNELL.

Hydrostatics: pressures and centers of pressure. Hydrokinetics: general equations of energy; orifices, weirs, nozzles, Venturi meters, etc.; losses of head; flow in pipes. Hydro-dynamics: forces on stationary and moving bodies.

## STRUCTURAL ENGINEERING

**S 270. Structural Analysis and Design.** Credit four hours. Lectures and recitations, daily except Sat., 8; computations and drawings at hours to be assigned. *Lincoln 14 and 29.* Prerequisite, C.E. 220, 221. Assistant Professor BURROWS.

One-fourth of the course includes structural details, i.e., the design of a wooden roof truss and other timber joints. The remainder of the course includes dead load, live load, and impact stresses in simple bridge trusses due to uniform live panel loads, locomotive axle loads, and highway loads. Text: Urquhart and O'Rourke, *Stresses in Simple Structures*.

**S 271. Structural Design.** Credit three hours. Lectures, computations, and drawing. Daily, 10:30-12:50. *Lincoln 14.* Prerequisite, C.E. 270. Assistant Professor BURROWS.

An elementary course in steel design. Complete design, detail drawing, bill of material, and estimate of weight of a steel roof truss, a through plate girder railroad bridge. Floor systems of highway bridges. Text: Urquhart and O'Rourke, *Design of Steel Structures*.

**S 274. Bridge Design.** Credit three hours. Computation and drawing, daily, 10:30-12:50. Prerequisite, C.E. 271. Assistant Professor BURROWS.

Computations and drawing for the complete design of a riveted railroad or highway bridge. The computations to determine the sections of all members, joints, splices, and other details are to be written up in systematically arranged reports. The drawing consists of general plans showing the location of all rivets as well as the composition and relation of all members and connections. The final reports are to give a full list of shapes and plates, and a classified analysis of weight for the span.

**S 280. Concrete Construction.** Credit three hours. Daily, 9-10:30. Prerequisite, courses C.E. 220, 221. Professor URQUHART.

Concrete materials, properties of plain concrete, its making and deposition; elementary theory of reinforced concrete as applied to columns, rectangular beams, and slabs; T-beams reinforced for compression; direct stress combined with flexure. Text: Urquhart and O'Rourke, *Design of Concrete Structures*.



**S 281. Foundations.** Credit three hours. Daily except Sat., 8. Prerequisite, courses 220 and 221. Piles and pile driving, including timber, concrete, tubular, and sheet piles; cofferdams; box and open caissons; pneumatic caissons for bridges and buildings, caisson sinking, and physiological effects of compressed air; pier foundations in open wells; freezing process; hydraulic caissons; ordinary bridge piers; cylinders and pivot piers; bridge abutments; spread footings for building foundations; underpinning buildings; subterranean explorations; unit loads. Text: Jacoby and Davis, *Foundations of Bridges and Buildings*. Recitations, collateral reading in engineering periodicals, and illustrated reports. Professor URQUHART.

**S 285. Reinforced Concrete Design.** Credit three hours. Daily except Sat., 10:30-12. Prerequisite, course 280. Professor URQUHART.

Theory and design of gravity, cantilever, and counterfort retaining walls. Design of multiple column footings of reinforced concrete. I-beam grillages. Design of bins and tanks: subsurface and supported on towers. Reports and sketches.

## ELECTRICAL ENGINEERING

The courses described below will be given only if a sufficient enrollment is assured. Prospective students should communicate with Professor STRONG before the opening of the Summer Session.

**S 410. Principles of Electrical Engineering.** Credit four hours. Daily except Sat.: Lectures, 9; computations, 10-1. Prerequisite, Physics 21, Mathematics 5a and 5b or the equivalent. *Franklin*. Assistant Professor STRONG.

Equivalent to E.E. 410 (formerly 411) and E.E. 415. Introductory direct current circuit and machine theory.

**S 416. Principles of Electrical Engineering.** Credit three hours. Lectures, daily except Sat., 8; computations, M W F, 10-1. Prerequisite, E.E. 415 or the equivalent. *Franklin*. Assistant Professor STRONG.

Equivalent to E.E. 416. Elementary alternating current circuit and machine theory.

**S 416a. Principles of Electrical Engineering.** Credit one hour. T Th, 10-1. *Franklin*. Assistant Professor STRONG.

Laboratory work to accompany S 416. The two courses when taken together are equivalent to E. E. 406.

## ADMINISTRATIVE ENGINEERING

**S 3A23. Business and Industrial Management.** Credit three or two hours. Daily except Sat., 12. One afternoon to be arranged for those desiring three hours credit. *West Sibley 2*. Professor BANGS.

A survey of the problems of business and industrial management designed for administrative engineering students although of considerable importance and open to any one interested in the problems of modern business. This rapidly growing field is concerned with business policies, types of business ownership, and includes the major functions of marketing, production, finance, and accounting. Major consideration is also given to the selection of personnel and to study of modern advertising.

One of the features of the course is the designing of an advertising portfolio and a critical study of the relationship of advertising to the modern organization.

**S 3A31. First Course in Accounting.** Credit three hours. Daily except Sat., 10. Two practice periods per week to be arranged. *West Sibley 2*. Professor BANGS and Mr. HANSELMAN.

Theory of debit and credit; the journal and ledger; the preparation of balance sheets and income statements; special journals; balance sheet analysis; financial mathematics—the use of compound interest tables, bond valuation, sinking funds.

## AGRICULTURE

In addition to the following technical courses, the NEW YORK STATE COLLEGE OF AGRICULTURE also offers courses in Agricultural Economics, Rural Sociology, Rural Education, Meteorology, and the various Biological Sciences. For these courses, see the appropriate division as given in the Table of Contents on page 3, or consult the Index at the end of this announcement.

## AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

A 102. **Farm Management.** Credit three hours. Lectures, daily except Sat., 10. *Agricultural Economics* 225. Laboratory, T, 1:40-4 and Sat., 8-10:30. *Agricultural Economics* 140. Some all day trips on Saturday; one two-day trip will be arranged. Professor HART.

Farming as a business; types of farming; size of business; balance of business; rates of production; farm layout; building arrangement; machinery; buying and selling; ways of starting to farm; forms of tenure and leases; choosing and buying a farm; use of capital and credit; planning, organization, and management of specific farms. Fee for materials, \$2.

A 115. **Prices.** Credit three hours. Lectures daily except Sat., 9. *Agricultural Economics* 125. Laboratory, W, 1:40-4. *Agricultural Economics* 140. Assistant Professor CUNNINGHAM.

An examination of the movements of agricultural and industrial prices. Fee for materials, \$2.

A 135. **Local Government.** Credit three hours. Lectures, daily except Sat., 8. *Agricultural Economics* 225. Laboratory, M, 1:40-4. A discussion period to be arranged. *Agricultural Economics* 140. Assistant Professor CATHERWOOD.

An analysis of the receipts, expenditures, and administration of counties and towns with special emphasis on current proposals for change. Fee for materials, \$2.

A 138. **Taxation.** Credit two hours. Lectures, daily except Sat., 11. *Agricultural Economics* 225. Assistant Professor KENDRICK.

The emphasis of the course is on state and local problems connected with rural taxation. The growth of public expenditures, the rise of modern tax problems, and the various problems of general property, income, inheritance, and motor vehicle taxation are treated. Attention is also given to the problems of state aid and of building a system of taxation. Fee for materials, \$2.

A 238. **Economics and the School.** Credit two hours. Lectures, daily except Sat., 9. *Agricultural Economics* 225. Assistant Professor KENDRICK.

An examination of various current economic problems of especial interest to school principals.

See also courses in **Economics** in the division of **Philosophy, History, etc.**

## AGRICULTURAL ENGINEERING

A 40c. **Advanced General Farm Shop.** Credit three hours for three special units of two weeks each. Units may be taken separately for one hour of credit each. Daily except Sat., 10-12. *Agricultural Engineering Laboratory.* Assistant Professor WRIGHT.

These courses are designed primarily for teachers of agriculture who are giving the work as part of the shop courses in high schools or who are conducting extension work. The preparation of job sheets will be a part of the instruction.

Unit 1. July 6-17. **Plumbing and its Application to the Home and Farm.**

A study of: (1) plumbing systems; (2) plumbing materials, including fixtures, pipe, fittings, etc.; (3) various types of domestic water systems. Practice to give skill in plumbing operations. Laboratory fee, \$1.

**Unit 2. July 20-31. Automobiles and their Engines.**

A study of (1) the principles of operation, care, and repair of automobile engines; (2) the general structure and principles of operation of the various automobile units, including modern features; (3) the servicing of cars, such as lubrication, battery care, tires, etc. Laboratory fee, \$1.

**Unit 3. August 3-14. Household Mechanics.**

A study of and practice in methods of servicing and repairing various types of household equipment such as pumps, water-systems, faucets, valves, heating plant, electrical devices, refrigerators, washing machines, sewing machines, cutting tools, etc.

**A 41. General Shop Work for Rural High-School Teachers.** Credit three hours. T Th, 1:40-4:45 and Sat., 8-12. *Agricultural Engineering Laboratory.* Professor ROEHL.

Practical jobs to develop skill in woodwork, saw filing, tool grinding, handle fitting, harness repairing, rope work, cold metal working, farm blacksmithing, painting and glazing, furniture repairing, and refinishing, as suited to the needs of rural communities.

A course for teachers of agriculture and general shop work in rural high schools. Designed to develop skill in performance. Laboratory fee, \$3.

**A 43. Field Machinery Repair.** Credit three hours for three special units of two weeks each. Units may be taken separately for one hour of credit each. M W F, 1:40-4:45. *Agricultural Engineering Laboratory.* Professor ROEHL and Mr. MORRISON.

This course is intended to prepare men to teach the repairing of farm machinery as part of the shop work in Vocational Agriculture.

**Unit 1. July 6-17.** A study of the care, repair and operation of plows, cultivators and other tillage machinery, with the emphasis on practical repair and maintenance.

**Unit 2. July 20-31.** A study of the care, repair and operation of mowers, binders, and other harvesting machinery with the emphasis on practical repair and maintenance.

**Unit 3. August 3-14.** A study of the care, repair and operation of planters, drills, and other seeding machinery, with the emphasis on practical repair and maintenance.

**A 44a. Industrial Arts General Shop.** Credit four hours. Daily except Sat., 10-12:30, and T Th, 1:40-4:45. *Junior High School Laboratories 102 and 110.* Mr. BECKER and Mr. RODEN.

A general course for teachers of agriculture who desire to qualify for the part-time teaching of industrial arts in the secondary school. The New York State Course of Study for Industrial Arts I (Comprehensive General Shop) will be used as a basis. Each student participates in the regular work, organization and administration of the shop work. Wood, art metal, machine, ornamental iron, electricity, soft metal casting, etc., will constitute the course. Should be accompanied by Rural Education A 142a. Laboratory fee, \$4.

**A 44b. Industrial Arts Wood Shop.** Credit two hours. Daily except Sat., 10-12. *Junior High School Laboratory 102.* Mr. RODEN.

A unit course, designed to follow the New York State Course of Study in Industrial Arts II (Tentative). The student will participate as in A 44 a. In addition, one quarter of the time will be devoted to the regular related wood work. Laboratory fee, \$2.

**A 44c. Industrial Arts Metal Shop.** Credit two hours. Daily except Sat., 8-10. *Junior High School Laboratory 110.* Mr. BECKER.

A unit course, designed to follow the New York State Course of Study in Industrial Arts III (Tentative). The student will participate as in A 44 a. One quarter of the time will be devoted to related metal work. Laboratory fee, \$2.

**A 44d. Industrial Arts Electrical Shop.** Credit two hours. T Th, 1-5:40. *Junior High School Laboratory 102.* Mr. BECKER and Mr. RODEN.

A unit course, designed to follow the New York State Course of Study in Industrial Arts IV (Tentative). The student will participate as in A44a. One quarter of the time will be devoted to related electrical work. Laboratory fee, \$2.

**A 101a. Electricity and its Application to the Home and Farm.** Credit three hours for three special units of two weeks each. Units may be taken separately for one hour of credit each provided the first unit precedes the second and the first two precede the third. M W F, 1:40-4:45 and one extra hour each week. *Agricultural Engineering Laboratory*. Assistant Professor WRIGHT.

Unit 1. July 6 to 17. A study of elementary electricity, dry cell and storage batteries, elementary wiring, lighting and power circuits, switching circuits, burglar alarms, wiring materials, wiring code rules. Laboratory fee, \$1.

Unit 2. July 20 to 31. A study of house wiring, including the actual wiring of a small building, heating appliances, motor appliances, illumination and illuminating equipment including portable lamps, and power distribution systems. Laboratory fee, \$2.

Unit 3. August 3 to 14. Electric Motors and Generators. A study of types of motors and generators commonly used on the farm and in the home together with their various applications. Opportunity will be given to build small motors and generators as a means of learning the principles of operation. Considerable time will be given to such matters as the selection, installation and servicing of these machines.

**A 240. Shop Organization and Management.** Credit two hours. Daily except Sat., 9. *Agricultural Engineering Laboratory*. Professor ROEHL.

A course designed for teachers of agriculture and general shop practices, village principals, and others who have responsibilities for teaching and supervising shop work in central schools and rural high schools. A course dealing with objectives, shop curriculum, plans of shops, designs of home-made equipment such as work-benches, tool and storage cabinets, lumber and iron racks, etc.; shop tools and supplies; shop management; the demonstration and job sheet methods of teaching. Students will be permitted to work on individual problems by arrangement.

## FLORICULTURE AND ORNAMENTAL HORTICULTURE

**A 2. Amateur Floriculture.** Credit one hour. Lectures, Th F, 12. *Plant Science* 37. Laboratory, F, 1:40-4:30. *Plant Science* 15. Miss SMITH.

The culture and use of plants suitable for window gardening and for outdoor home gardening. Laboratory fee, \$1.

**A 3. Herbaceous Plant Materials.** Credit two hours. Lectures, M T W Th, 8. *Plant Science* 37. Laboratory, W Th, 1:40-4:30. *Plant Science* 15, *Greenhouses, and Gardens*. Mr. ALLEN.

A study of herbaceous plant materials. The aim is to give the student such an intimate knowledge of these forms of plants as may be used in garden planting, either in home grounds, rural social centers, or public parks, more particularly with reference to summer conditions. Students must have had sufficient botany to be familiar with the botanical characters and classification. An excellent collection of plant material is available for demonstrations. All members of the class must participate in an excursion to visit private estates and public parks in Canandaigua and in Rochester on August 7 and 8. Laboratory fee, \$2.

**A 4. Planning and Planting the Home Grounds.** Credit two hours. Lectures, W Th, 12; *Plant Science* 37. Laboratories, W Th, 9-12, and one additional period; *Plant Science* 433. Acting Professor PORTER.

A brief course intended to familiarize the student with the best trees, shrubs, and vines and their use on the home grounds. A discussion of the fundamental principles of landscape planning as related to our smaller residence properties. Not a technical course; open for general election. Students will need a set of drawing instruments and should bring with them, if possible, a measured plan and photographs of some property they wish to design. Registration limited to sixteen. Laboratory fee, \$3.

**A 5. Flower Arrangement.** Credit one hour. Lecture, M, 12. Practice, M T, 1:40-4:30. *Plant Science* 22. Miss SMITH.

A study of the principles and methods of arranging flowers and plants for decorative use in the home and for public functions. Registration limited to twenty. Laboratory fee, \$3.

**A 8. Woody Plant Materials for Landscape Planting.** Credit four hours. Lectures, M T W Th., 9. Laboratory and field trip, M T, 10-12:30, 1:40-4:30. *Plant Science* 29 and *Campus*. Professor CURTIS.

Intended for graduate students and advanced students in floriculture and ornamental horticulture. Laboratory fee, \$3.

A study of the characteristics and requirements of trees, shrubs, and vines for landscape planting. The laboratories and field trips enable the student to recognize common woody plants. The lectures discuss planting areas, planting practices, and plant materials, in order that the student may learn to see plants not only as growing things but as possible units in designs with which he may be able to improve his surroundings. All members of the class must participate in an excursion on August 7 and 8 to visit private estates and public parks in Canandaigua and in Rochester. The transportation charge will be \$5.

**A 109. Summer Propagation.** Credit two hours. Lectures, T W, 8. Laboratories, T W, 1:40-4. *Greenhouses* and *Nurseries*. Assistant Professor HUNN.

Intended for students who have had the beginning course in propagation. Laboratory fee, \$3.

Advantage is taken of the summer months to amplify the regular and summer courses in propagation by intensive practice in the summer production of soft wood cuttings and the budding of nursery stocks. This will include the management of hot beds and the lining-out system followed in the production of stock plants. Two extra hours a week before and after classes are required for care of hot beds. Two one-day trips are planned for visits to producing nurseries on July 10 and 31.

**A 118. Landscape Construction.** Credit two hours. Prerequisite, permission to register. Open only to advanced students. Lectures, F Sat., 8. *Plant Science* 37. Laboratory, F, 9-12:50, 1:40-4:30. *Practice fields*. Acting Professor PORTER.

A course covering the construction problems of the service departments of nursery landscape firms, greenkeepers, and landscape contractors. Includes studies and practice of grading, earthwork, walls, terraces, steps, pools, and the like. Several trips to visit work under construction will be required. Laboratory fee, \$8.

**A 171. Tree and Shrub Management.** Credit two hours. Registration by permission of the instructor. Lectures, T Th, 9; laboratories, T, 10-12:50 and 1:40-4. *Plant Science* 40 and *Nurseries*. Assistant Professor HUNN and others.

A study of the principles and practices employed in the transplanting and care of trees and shrubs including fertilizing, pruning, spraying, big-tree moving, and a discussion of special plants for special places.

## FORESTRY

**A 4. Forests and Forestry.** Credit two hours. Lectures daily except Sat., 8. *Fernow* 122. Professor HOSMER.

This course is designed to meet the requirements of those who wish an elementary knowledge of forestry. Topics to be considered: the nature and scope of forestry; the economic importance of forests to the nation, including the influence of forests on stream flow and the relation of the forest to recreation; the forest as a biological unit; methods employed in the perpetuation of forests; brief description of the forest regions of the United States; the present status of Federal, State and private forestry.

This course should be helpful to teachers in secondary schools whose syllabuses in Biology, Civics, Economics, Physical Geography, and General Science include forestry topics.

## HOME ECONOMICS

The Summer Session courses in the NEW YORK STATE COLLEGE OF HOME ECONOMICS are planned primarily to meet the needs of teachers, extension workers and other persons dealing with problems in homemaking who wish to broaden and strengthen their home economics background, to see problems of family living in their larger community relationships and thus to be able to meet more adequately the needs of the situations in which they work.

## A POINT OF VIEW

What happens in homes is of vital significance. Especially in the years of the depression and during the period of beginnings in social reconstruction, education in relation to the home has been of great importance. Whenever problems of the home are attacked, whether by the homemaker herself, or by those in positions of community leadership, as teachers, extension workers, or social workers, it is important that these problems be seen as many-sided ones, involving closely related factors, and that throughout them all run problems of management and of human relationships. This emphasis is being used increasingly in home economics teaching. Furthermore, the point of attack is increasingly that of the needs found in situations themselves. With this emphasis and approach, home economics subject matter tends to fall into its rightful place—as one of the tools in the solution of home problems.

In order to help homemaking educators think of home economics subject matter as material to help in solving problems and in order to reveal problems of family living as reaching beyond the family circle into the community, a central unifying course is offered. In addition, subject matter courses are offered with a main emphasis on the contribution such subject matter can make to family living. While it is not necessary that students select the unifying course, it is thought that this course together with one or two technical or professional courses make a strong program. The courses in home economics have been scheduled in such a way that it is possible to take the unifying course from 8 to 10 A.M. and a professional or technical course in the afternoon. All courses are given in *Martha Van Rensselaer Hall*.

## A UNIFYING COURSE IN HOMEMAKING

**E 285. The Philosophy and Function of Homemaking Education.** Credit two hours; or three hours by special arrangement for work on individual problems. Daily except Sat., 8-10. *Amphitheatre*. Assistant Professors BRUCHER and CUSHMAN, Professor MORIN, Mrs. WELLS. Discussion leader, Professor WARING.

A discussion course with instructors representing the several fields of home economics subject matter, home economics education and administration, and extension teaching. The purpose of the course is to discover possibilities for unifying homemaking programs in the various local situations through thinking and discussion by a group composed of members who have had varying kinds of training and experience related to homemaking. The class includes persons dealing with children and adults of both sexes, and living in rural, semi-rural and urban communities; they represent homes, educational, religious and social organizations, government and welfare agencies. Points of view of administrators, supervisors, homemaking and social science teachers and of extension and social workers will be considered.

The class discussions constitute the main part of the course, although a small amount of outside preparation is required. There will be daily discussion in the diversified group as a whole, and in smaller groups on the basis of common interests.

Students who have specialized interests growing out of a local need and who plan to work on these for a third hour of credit are asked to confer with the instructors concerned during registration. Fee, \$5 for two hours credit; \$6 for three hours credit.

## ECONOMICS OF THE HOUSEHOLD AND HOUSEHOLD MANAGEMENT

**E 112. Household Management in Relation to Family Living.** Credit two hours. Discussions and laboratory, T Th, 2-5. *Room G-19A.* Assistant Professor CUSHMAN.

This course is for teachers, extension workers, social workers, and homemakers who wish to study methods of work, arrangement of work centers, and selection and use of equipment and materials in relation to satisfaction of the family and economy in the home. Group conferences in homes and in community halls; tours to improved kitchens and other work centers; experiments with portable walls and equipment in planning work centers; and other types of home, community and laboratory demonstrations will be included. In this course, household management is approached from the viewpoint of the activities of the members of the family, and the relation between good home management and wholesome community life. Students will be given help in assembling illustrative material to meet their needs. Fee, \$3.50.

**E 160. Problems in Consumer Buying.** Credit two hours. Discussions and laboratory, M W, 2-5. *Room 124.* Mrs. HOTCHKISS.

This course is planned to help teachers, extension workers, and others in gaining an understanding of the field of consumer buying. The first four weeks will be spent in building a background, with consideration given to the following subjects: buying problems of consumers in relation to the marketing process; effects of consumers' buying practices on marketing costs and policies; information and guides available to consumer buyers; possibilities of further aid through standardization and informative labeling; evaluation of certain merchandising practices; forms of social control which protect consumer buyers. The last two weeks will be spent in helping students analyze situations in their local schools and communities and to make plans for consumer education in their own localities; in evaluating sources of information on consumer buying; and in assembling illustrative material. Fee, \$2.

## FAMILY LIFE

**E 101. Principles in Behavior and Guidance.** Elementary course. Credit two hours. Lecture-discussions, M W F, 3-4:30. *Room 117.* Nursery School observations, one hour daily except Sat., hours to be arranged. Prerequisite or parallel, a course in psychology of childhood and adolescence. Miss MARKEY and Miss ROBINSON.

In this course the study and observation of children is made the basis for students to understand the less obvious and less simple behavior of themselves and other adults, and to understand the function and relation of routine and creative activities in the total pattern of behavior.

Students are directed to observe the child's behavior impersonally and objectively; to record accurately what they see; to organize their records so that they disclose significant and characteristic behavior of each child; to distinguish between desirable and undesirable guidance procedures of adults.

Nursery School observation is arranged at different hours each day in order to sample typical activities. These hours should be planned with the instructor during registration. Laboratory fee, \$7.50.

**E 115. Family and Social Relationships.** Credit two hours. Daily except Sat., 12. *Room 124.* Assistant Professor ROCKWOOD.

This course is designed for teachers of family and social relationships. Through discussion, reading and observation the student will be given the opportunity to appreciate the process of personal adjustment and the influence of human relationships on the adjustment of the individual. Special attention will be given to the influence of the material aspects of homemaking and housekeeping on the personal relations of family members; and to the social and economic forces acting upon the home environment. Fee, \$2.50.

**E 214. Studies in Family Life.** Credit one or two hours. Registration by permission of the instructors. T Th, 2-4. *Room 124.* Professor WARING and Miss MARKEY.

The purpose of the course is to offer to a limited number of teachers, graduate students, supervisors, and administrators an opportunity to study and discuss reports of research in family life and to work out plans for study along lines of special interest within this field. Fee, \$2.50.

**E 220. Participation in the Nursery School.** Credit two or three hours. Laboratory and conference hours to be arranged. Open to home economics teachers and other students with qualifications satisfactory to the instructor. Limited to sixteen students. For each hour of credit, there is required a total of thirty hours of supervised participation with the children in the Nursery School and several conferences each week with the teaching staff. Prerequisites, child psychology and an elementary course in behavior. Professor FOWLER, Miss ROBINSON, and Mrs. BATES.

The opportunity to do supervised teaching of young children in the Nursery School not only helps students to understand children and their behavior and guidance but it helps them to understand themselves, their students, their friends and family members. It contributes subject matter in child care and training and gives the student-teacher practice in guiding a child activity program, in working with staff members concerned with all aspects of child development, in cooperating with parents and community agencies in the promotion of child welfare. Laboratory fee, \$5.

### FOODS AND NUTRITION

**E 131. Problems of Family Nutrition with Special Emphasis on Child Feeding.** Credit, lectures and discussions, one hour; with laboratory, two hours. Lecture and discussion, T, 2-5; laboratory, Th, 2-5. One conference hour by appointment. Laboratory limited to twenty students. Prerequisite, knowledge of general nutrition and dietetics obtained from previous college courses in these subjects. Room 343. Professor MONSCH.

This course comprises a study of family problems in nutrition, giving special emphasis to the nutritional needs of children of all ages. The relation between sound nutrition practices and community health and the family's food budget are considered. The laboratory period offers opportunity for experience in family situations in homes in Ithaca; it includes observation and experience in a well-baby clinic, in the Nursery School, in the cafeteria, and in the Ithaca Children's Home. Fee, lecture, \$1; with laboratory, \$6.

**E 221. Survey of Foods and Nutrition Problems.** Credit two hours. Open to graduate and advanced students whose preparation is satisfactory to the instructor. T Th, 2-4:30. Room 426. Assistant Professor BRUCHER.

The course will consider the interrelation of subject matter in food selection and preparation; comparison and evaluation of methods for the effective use of nutrition knowledge; adequate nutrition on reduced food budgets; relation of individual to community nutrition problems; the school lunch; methods of evaluating the results of sound nutrition practice as measured in individual progress; and evaluation of source material and literature. Laboratory fee, \$2.50.

### HOUSEHOLD ART

**E 102. Art Essentials in the Home.** Credit two hours. Registration limited to twenty students. This course cannot be substituted for Household Art 31 given during the regular year. Discussion and laboratory, M W, 2-5. Room 408. Professor MORIN and Miss BROWN.

This course involves the practical application of art to home and community problems. It will include lectures and discussions on architecture, furniture, textiles and crafts; trips to homes, schools and other buildings of interest; problems in the selection and arrangement of furniture; draperies, and upholstery materials for homes, homemaking centers in the school or in other community rooms. Laboratory fee, \$5.

**E 110. Problems in Furnishing Homemaking Centers.** Credit two or three hours. Designed for teachers and extension workers. Prerequisite, E 102 or an equivalent satisfactory to the instructor. Discussion and laboratory, T Th,



2-5. For three hours credit, an additional hour daily will be arranged. *Room 408. Professor MORIN and Miss BROWN.*

This course is offered for students responsible for furnishing homemaking centers in schools, Home Bureaus, and other community rooms. The selection and arrangement of furnishings will be planned according to individual situations. Plans for purchasing furnishings will be based on the study of the current market. Fee, \$5 for two hours credit; \$7.50 for three hours credit.

**E 147. Crafts Adapted to Clothing and Small Furnishings.** Credit two hours. M W F, 2-5. Students are asked to consult the instructor before registering in the course. Registration limited. *Room 217. Mrs. WELLS.*

The purpose of this course is to develop in the student an inquiring and broadening conception of beauty in crafts, through creative experience in simple design problems. Originality in the use of texture combinations, structural detail, surface decoration and color will be emphasized in designing decorative details of dress, and of furnishings. Students may complete these articles at their convenience after the close of summer session. Or, if the student desires to design and only partially execute the problem, provision will be made for obtaining persons experienced in simple techniques to complete the work during summer session at the student's expense. Estimated cost of materials, \$10. Laboratory fee, \$3.

**E 148. Crafts: Weaving.** Credit two or three hours. Registration limited. Laboratory two or three hours daily, except Saturday; time to be arranged. *Room 317. Miss MCBRIDE and Miss LONGBERS.*

For beginners the problems will include a study of design and color, principles of loom operation, and weaving of small articles. For students with previous experience in weaving, advanced work will include more intricate types of weaving, pattern analysis, and design and color as used in Swedish weaving. Opportunity will be offered for work with natural dyes, using plant materials available at this season of the year. Approximate cost of materials, \$5. Laboratory fee, \$5 for two hours credit; \$7.50 for three hours credit.

## TEXTILES AND CLOTHING

**E 118. Clothing Design and Construction.** Credit two to four hours. A minimum of twelve hours a week in the laboratory is required for two hours of credit. Registration is limited to sixteen students. Students are asked to consult the instructor before registering. The laboratory will be open each afternoon from 12:30 to 5:30, except Saturdays. *Room 234. Miss BROOKINS.*

This course will be arranged on a studio plan in which individual instruction will be given to meet the needs of each person as related to her particular situation. Illustrative material for effective presentation of different phases of clothing construction will be considered. Problems selected may be in draping, cutting, fitting, finishing and may include the complete construction of a garment. Estimated cost of materials, \$10. Laboratory fee, \$3.

## LEADERSHIP TRAINING

**Home Economics Leadership Training.** July 13-25. This conference, for county leaders of home economics and their alternates, is sponsored by the State Department of Education. Its purpose is to train for county group leadership. Study will be made of the organization of the county teacher group, the functions of the organization, its development and place in the state education program. There will be two two-hour sessions daily. No fee. *Miss VAN LIEW.*

## HOTEL ADMINISTRATION

In 1922 Cornell University established, with the cooperation and financial assistance of the American Hotel Association, a four-year course in Hotel Administration for high-school graduates desiring to enter the administrative departments of the hotel business. Many hotel proprietors and managers, who have been unable to take a four-year university course, have asked for shorter courses with less formal entrance requirements.

To meet this demand, unit courses for periods of less than six weeks have been arranged. Titles of courses and the credit for each are given below. A circular giving full details of these courses will be issued about April 15. For this circular or for other information about the work in this department, address Professor H. B. MEEK, Martha Van Rensselaer Hall, Cornell University, Ithaca, N. Y.

The first unit course in this department begins on Monday, June 22.

#### REQUIREMENTS FOR ADMISSION

Anyone employed in hotel work is eligible for admission. Prospective students will be required to present evidence of good character, of sincerity of purpose, and of interest in hotel work. It is distinctly to the advantage of prospective students to file applications early, in any event not later than June 15.

#### COURSES OF INSTRUCTION

- H 11. **Hotel Operation.** Credit two hours.
- H 15. **Public Relations and Business Promotion.** Credit one hour.
- H 18. **Personnel Methods.** Credit one hour.
- H 22. **Quantity Food Preparation.** Credit two hours.
- H 24. **Menu Planning.** Credit one hour.
- H 25. **Hotel Stewarding.** Credit one hour.
- H 31. **Hotel Accounting.** Credit one to six hours.
- H 33. **Interpretation of Hotel Financial Statements.** Credit one hour.
- H 36. **Food Control.** Credit one hour.
- H 41. **Hotel Engineering and Maintenance.** Credit two hours.
- H 71. **Hotel Housekeeping.** Credit one hour.
- H 81. **Hospital Operation.** Credit two hours.

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