

Cornell University
Announcements



*Summer
at Cornell 1969*

Courses of Study

SUMMER SESSION OFFICE

The Office of the Summer Session is in Room B-20, Ives Hall; the telephone number of the Office and of the Director is 275-4987. The Office will be open from 8:00 A.M. to 4:30 P.M. Monday through Friday and from 8:00 A.M. to NOON on Saturdays during the period of the Summer Session. Martin W. Sampson is Director.

CORNELL UNIVERSITY ANNOUNCEMENTS

Volume 60. Number 16. March 18, 1969. Published twenty-two times a year; four times in August; three times in March and October; twice in May, July, September, and November; once in January, April, June, and December. Published by Cornell University at Sheldon Court, 420 College Avenue, Ithaca, New York 14850. Second-class postage paid at Ithaca, New York.

Cornell University

Summer Session
1969

Eight-Week Session, June 16—August 8

Six-Week Session, June 25—August 8

Special Programs of the Summer Session

Calendar of the Summer Session

June 16, Monday

Registration for the eight-week Summer Session: in Room 117, Ives Hall, any time between the hours of 8:30 a.m. and 4:30 p.m. which does not conflict with attendance in the class meeting of courses elected. Persons registering after this date without prior approval will pay a \$10.00 fee for late registration. Tuition and fees are due for payment at the Treasurer's Office, 260 Day Hall, which closes at 4:30 p.m. Instruction begins at the time and place announced for each course.

June 18, Wednesday

Last day for withdrawal from the eight-week session without payment of a fraction of tuition and fees.

June 20, Friday

Last day for payment of tuition and fees for the eight-week session at the Treasurer's Office, which closes at 4:30 p.m.

June 25, Wednesday

Registration for the six-week Summer Session: in Lynah Hall; undergraduates, 8:30 to 11 a.m.; graduates and special students, 1 p.m. to 3:30 p.m. Persons registering after this date without prior approval will pay a \$10.00 fee for late registration. Tuition and fees are due for payment at the Treasurer's Office, 260 Day Hall.

June 26, Thursday

Instruction in the six-week session begins at the time and place announced for each course. Late registrants report to the Summer Session Office, B-20 Ives Hall, to complete registration.

June 27, Friday

Last day for making changes in registration in the eight-week session *without payment of a fee* at the Summer Session Office. A \$10.00 fee for change in registration will be charged after this date. *Last day for withdrawal from the six-week session without payment of a fraction of tuition and fees.*

July 1, Tuesday

Last day for payment of tuition and fees for the six-week session at the Treasurer's Office, which closes at 4:30 p.m.

July 4, Friday

Holiday

July 7, Monday

Last day for making changes in registration in the six-week session *without payment of a fee* at the Summer Session Office. A \$10.00 fee for change in registration will be charged after this date.

July 11, Friday

Last day for making changes in registration in the eight-week session. *No changes will be permitted after this date except for reasons beyond the control of the student.*

July 16, Wednesday

Last day for making changes in registration in the six-week session. *No changes will be permitted after this date except for reasons beyond the control of the student.*

July 21, Monday

Registration at the Summer Session Office for the second period of any three-week unit courses elected by students not previously registered in the Summer Session.

August 7, Thursday

Final examinations begin: schedule on page 29.

August 8, Friday

Six-week and eight-week sessions end, 4 p.m.

BE SURE TO BRING THIS *ANNOUNCEMENT* WITH YOU FOR USE ON REGISTRATION DAY AND THROUGHOUT THE SUMMER SESSION. YOU WILL BE HELD RESPONSIBLE FOR BEING FAMILIAR WITH ALL ITEMS OF INFORMATION AND REGULATIONS IN THIS *ANNOUNCEMENT* WHICH APPLY TO YOUR PARTICIPATION IN THE SESSION.

AN APPLICATION FORM IS IN THE
BACK OF THIS *ANNOUNCEMENT*

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The courses and curricula described in this Announcement, and the teaching personnel listed therein, are subject to change at any time by official action of Cornell University.

Cornell University

THE SUMMER SESSION

GENERAL INFORMATION

The Summer Session of Cornell University is planned with the cooperation of the faculties of the separate schools and colleges. The program is designed with particular regard for what can be taught satisfactorily in a short term and in a summer period environment. Every effort is made to maintain the same standards of instruction and academic performance as those of the academic year.

A balanced program of study and recreational activities is available to college-bound high school seniors, undergraduates, graduate degree candidates, and persons interested in continuing education for personal or professional improvement. A varied selection of courses is offered by the Summer Session to those persons for whom the summer period is especially convenient for study.

Classes in the summer provide the particular advantage of optimum size for close association between student and instructor. The median class size in past summers has ranged from twelve to fifteen students.

All necessary facilities of the University are available to students registered in the Summer Session: libraries, classrooms, and laboratories; residence halls, dining rooms, and cafeterias; health services and medical care; counseling services; student union, chapel, playing fields, and a variety of recreational areas.

Admission

The Summer Session objective is to place the facilities of the University at the disposal of persons who can use them to good advantage for serious educational purposes during the summer period.

Admission of undergraduates or graduate students to the Summer Session establishes no priority with respect to admission to the regular terms. Students seeking admission to Cornell undergraduate colleges should apply directly to the Office of Admissions, 247 Day Hall. Students wishing to apply to the Graduate School should write to the Dean of

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the Graduate School, Sage Graduate Center, Cornell University, Ithaca, New York 14850.

Students are eligible for admission to the Summer Session in the following categories:

UNDERGRADUATES

The undergraduate category includes all persons who are candidates in good standing for the Bachelor's degree and those precollege, high school graduates who have been accepted for admission to Cornell University or to any other college or university. No other high school students will be accepted except in certain other programs of the Summer Session described on pp. 63-80.

Undergraduates are required to register for a minimum of four credit hours in the eight-week session or three credit hours in the six-week session. Permission to register for more than ten credit hours for the eight-week session or eight credit hours for the six-week session will be granted only to those students with high academic averages, upon the recommendation of their advisers and the approval of the Director of Summer Session.

Applying for admission consists of completing the application form contained in the back of this *Announcement*, or a form which will be mailed on request. A Cornell University undergraduate degree candidate must have the application approved by the appropriate officer of his school or college (see p. 9).

Applications for admission should be returned by June 9 for the eight-week session or June 18 for the six-week session. Notification of acceptance to register will not be sent out for applications received after those dates. Late applications are welcomed, but obviously the risk of finding enrollment filled is greater.

High school graduates and undergraduate degree candidates should consult the appropriate official, either in the college to which they have been admitted, or where they are now matriculated, for advice in planning their summer study programs. This is important in order to assure that the credit they will earn will be accepted toward their degree programs. Credit for courses in the Summer Session is comparable to credit for courses offered during the academic year at Cornell. Undergraduates are not permitted to register for audit except by permission of the Director of the Summer Session.

GRADUATES

Graduate classification applies to candidates for advanced degrees either at Cornell University or other colleges or universities. Application for admission should be made by June 9 for the eight-week session or June 18 for the six-week session to ensure a place in classes. A graduate student may apply as late as the date of registration in either session, but he does so at the risk of finding enrollment filled.

An application form is included in the back of this *Announcement* or will be mailed on request. Admission to the Summer Session does

not constitute admission to the Graduate School at Cornell University as a degree candidate.

A graduate student matriculated in the Graduate School of Cornell University may, in the eight-week session, register for as many as ten hours of credit upon recommendation of his Special Committee chairman. In the six-week session the maximum is eight credit hours.

Degree candidates may seek residence credit toward degrees in the amount of one-half of a unit for a program of eight or more credit hours in the eight-week session, or in the amount of two-fifths of a unit for a program of six or more credit hours in the six-week session. Request for residence credit is made to the Graduate School and must be supported by the student's Special Committee. (See p. 15 for information regarding admission to the Graduate School.)

A candidate for a graduate degree in an institution other than Cornell University who is planning to obtain credit toward his degree by means of his Summer Session program, does not register in the Cornell Graduate School but only in the Summer Session. He may register for a maximum of ten credit hours in the eight-week session or eight credit hours in the six-week session. Approval of the Director of Summer Session is required for programs exceeding the maximum. Before registering he should arrange with the institution in which he is a degree candidate for the acceptance of the credit earned.

SPECIAL STUDENTS

Teachers and members of the general public who are not candidates for academic degrees are eligible for admission to the eight- or six-week session to take courses to meet certification requirements, for personal interest, or for professional improvement. Maximum course load is the same as for graduate students (see p. 7). Courses may be elected at either the graduate or undergraduate level depending on the student's background. To apply for admission, complete the application form included in the back of this *Announcement*, or which will be mailed on request. Application for admission should be made by June 9 for the eight-week session or June 18 for the six-week session to ensure a place in classes. A special student may apply as late as the date of registration for either session but does so at the risk of finding the course enrollment closed.

High school students who do not classify as "undergraduates" (see p. 6) are not eligible for admission to either the eight- or the six-week sessions as "special students". College students who have been suspended or dropped from their college or university are not eligible for admission as "special students" until at least one year after the date of their suspension or separation. Exceptions to this rule are rarely granted and then only with the specific approval of the Director of Summer Session.

APPLICATION FOR ADMISSION

Admission to the eight-week or six-week session is gained through formal application. The application form and instructions are included

in the back of this *Announcement*. Requests for additional copies are to be addressed to the Director of Summer Session. All parts of the form pertaining to the student who is applying must be filled out in full. Cornell undergraduates and those students who have been accepted for fall admission are required to have the application signed by the appropriate official of his school or college (see p. 9).

Registration coupons, necessary for registration in the eight- or six-week sessions, will be mailed to the applicant after favorable action on the application has been taken. Included as part of the registration forms is a certificate of admission. Application and information pertaining to Housing and Dining will be sent with the registration material.

Applicants for admission to the Special Programs of the Summer Session do not use the form referred to above. Each program has a separate application form which is obtained by request from the Director of that program. (See descriptions of Special Programs, pp. 63-80).

Academic Credit

Courses offered in the eight-week and six-week sessions are assigned appropriate hours of credit. The same is true in many of the other programs of the Summer Session. Students are not to register for any course work which normally cannot be completed by the end of the Summer Session term.

In this *Announcement* each credit course is marked immediately after the title in one of three ways.

(U): These courses carry credit only at the undergraduate level. Students registered in the Graduate School of Cornell University will not receive credit toward advanced degrees for these courses unless such credit is specifically recommended by the committee in charge of their work.

(U,G): These courses are offered both at the graduate and undergraduate levels. Graduate students who are candidates for advanced degrees or who wish certification for work done at the graduate level must indicate at the time of registration their intention to complete the course at the graduate level and must be prepared to do any additional work that may be required. Students registered in "U,G" courses should consult with their instructors early in the session to see that the level is properly recorded. Accuracy of final grade reporting depends upon such action.

(G): These courses are intended primarily for students who are candidates for advanced degrees, for teachers, and for others who wish certification to accrediting agencies for work done at the graduate level. Undergraduates with adequate preparation may register for these courses only after receiving permission from the instructors in charge.

AUDITORS

A graduate or special student who desires to attend a course or courses for no credit may register for such courses as an auditor. Such registration requires regular attendance in class and completion of all required work except the final examination. Registration will be cancelled for persons who do not participate fully. Any person who withdraws from a course as an auditor must come to the Summer Session Office, B-20 Ives Hall, and officially notify the appropriate persons of his withdrawal.

A mark of "V" will be recorded for satisfactory completion of a course. Tuition for auditing a course will be charged at the same rate as for credit.

Undergraduates are not permitted to register for audit except by permission of the Director of Summer Session.

CREDIT TOWARD DEGREES AT CORNELL UNIVERSITY

A student matriculated in an undergraduate school or college of Cornell University will be admitted to the Summer Session only after the appropriate officer from the following list has approved and signed his application for admission.

College of Agriculture: Professor J. P. Hertel

College of Architecture: Dean Burnham Kelly, Professor O. M.

Ungers, Professor John P. Shaw or Professor Martin Dominguez

College of Arts and Sciences: Associate Dean A. J. Cheney

College of Engineering:

Basic studies: Professor H. G. Smith

Chemical: Professor C. C. Winding

Civil: Professor William L. Hewitt

College Program: Professor William H. Erickson

Electrical: Professor J. L. Rosson

Industrial: Professor B. W. Saunders, Professor H. P. Goode

Materials Science and Engineering: Professor W. S. Owen

Mechanical: Professor G. R. Hanselman

Engineering Physics: Professor T. R. Cuykendall

College of Home Economics: Mrs. Joyce McAllister

School of Hotel Administration: Dean R. A. Beck

School of Industrial and Labor Relations: Assistant Dean D. P. Dietrich

Division of Unclassified Students: Professor M. W. Sampson

Grades

All courses are reported on the basis of letter grades: A+ through D- and F (for failure). The only exceptions permitted are for registrations for audit and for those offerings for graduate students involving individual work such as in research and special problems. In the case of

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auditors the mark for satisfactory completion will be "V" ("Visitor") to be recorded on the official transcript. A mark of "S" (Satisfactory) or "U" (Unsatisfactory) may be used for graduate students registered for research and other individual work.

If a student is prevented, for medical or other reasons acceptable to the instructor, from completing the work in any course before the last day of the session, he may request the instructor to report his grade as "Incomplete." It is the student's responsibility to make specific arrangements with his instructors to complete the course work and have the grade reported to the Summer Session Office. A mark of "F" will become the final recorded grade for the course if the work is not completed by January 1, 1970. A student who drops a course without official change in registration will automatically receive a failing grade.

Students may hand in self-addressed postcards to their instructors with their final examination papers to receive the final marks in their courses, or they may leave a stamped, self-addressed envelope with the Registrar, 240 Day Hall, for this purpose. Grades for Cornell graduate and undergraduate students are automatically sent to their college offices. *Final marks will not be available at the Summer Session Office.*

TRANSCRIPTS. For all non-Cornell students, a transcript of the academic record of courses taken in the Summer Session will be sent to the college of the student's choice only upon request, directed to the University Registrar, and payment of the fee of one dollar per transcript. Normally no transcript is available for "noncredit" courses.

Registration

Formal registration is required for admission to courses of the Summer Session.

EIGHT-WEEK SESSION

All students in the eight-week session will register on Monday, June 16. All classes scheduled for the eight weeks will start on this date. Students are to complete their registration at any time during the day between the hours of 8:30 a.m. to 4:30 p.m., which does not conflict with attendance in the class meeting of courses for which they are registering.

Each student must bring his registration forms to Room 117, Ives Hall for completion and approval. Directions for processing the registration forms will be given at that time.

Students in the eight-week session may elect a course from the program in the six-week session provided the time schedule of classes does not conflict. Students taking courses in both sessions will register their entire program on Monday, June 16.

SIX-WEEK SESSION

Students in the six-week session will register on Wednesday, June 25, in Lynah Hall. Undergraduates register in the forenoon, Graduate

and special students register in the afternoon. The certificate of admission, which is part of the registration forms sent to each student for the six-week session, will state the hour of the day when he will be admitted to Lynah Hall. Directions for registration procedure will be issued at the entrance. Students who for any reason have not received their registration forms will report to the admissions table in Lynah Hall: undergraduates at 8:30 a.m.; graduate and special students at 1 p.m.

UNIT COURSES

Unit courses are those of less than six weeks in length, and are indicated by a *u* following the course number, with the dates included in the course descriptions. Students who register for *only* a unit course will do so *at the first class meeting of the course*. Unless otherwise specified, the place of registration will be the Summer Session Office, B-20 Ives Hall, at a time during the day which does not interfere with class attendance.

SPECIAL PROGRAMS

Registration for *Special Programs* (pp. 63-80) will take place at the time and place specified for each program.

LATE REGISTRATION

Persons who fail to appear for registration on the date specified for either the eight-week or six-week sessions will be charged a fee of \$10.00 for late registration unless the fee is waived through prior approval of the Summer Session Director.

If a student knows that circumstances beyond his control will prevent him from registering at the specified time, he should write to the Director of Summer Session explaining the circumstance, and requesting a waiver of the late registration fee.

CHANGES IN REGISTRATION

Changes in registration include cancellation of a course, change from one course to another, change from undergraduate to graduate level of credit or vice versa, addition of a course to a program, change in credit hours, or change from credit to auditor status or vice versa.

No change of registration is official unless made by appearing at the Summer Session Office, B-20 Ives Hall. This must be done as early as possible. Except for reasons beyond the control of the students, no change in registration will be permitted after 4 p.m. on July 11 for students in the eight-week session and after 4 p.m. on July 16 for those in the six-week session. When a change in registration involves enrollment in another course or change in credit status, the permission of the instructor of the course is necessary before the change will be

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made. A Cornell undergraduate must also obtain permission from the appropriate official of his school or college, who originally approved his application.

A student enrolled in the eight-week session, who desires to change courses to those in the six-week session only, must come to the Summer Session Office after the regular six-week session registration day (June 25) and initiate a change of registration.

Penalty fees for changes in registration after the deadline dates, are described under Tuition and Fees below.

WITHDRAWAL FROM SUMMER SESSION

A student may apply for withdrawal at any time by appearing in person at the Summer Session Office and stating his reason for withdrawing. The student is required to pay twenty percent of the term's tuition and general fee for each week or fraction thereof between registration day and the effective date of withdrawal. There is no charge if withdrawal is made by Wednesday, June 18, in the eight-week session; or by Friday, June 27, in the six-week session.

A grade of "F" will automatically be recorded for all courses in which the student is enrolled if he withdraws without officially notifying the Summer Session Office.

Approval of withdrawal requires the surrender of the student's Official Registration Certificate and all privileges it provides as of the date granted.

Tuition and Fees

Tuition and fees are due and payable at the Treasurer's Office in Day Hall on registration day. For the eight-week session the date is June 16. For the six-week session the date is June 25.

The last day for payment without penalty is Friday, June 20, in the eight-week session and Tuesday, July 1, in the six-week session. A penalty of \$10.00 is charged if payment is made after these dates. The Treasurer's Office closes at 4:30 p.m.

TUITION

Tuition is charged according to the number of credit hours for which the student is registered. The rate of tuition is \$55.00 per credit hour. Students in the eight-week or six-week sessions, permitted to elect one or more courses from a Special Program of the Summer Session (see pp. 63-80), will be charged at the \$55.00 rate per credit hour.

FEES

Students in the eight-week and six-week sessions will pay, in addition to tuition, a general fee of \$5.00 per week, which entitles them to

medical and hospital services (see pp. 18 and 19), administration services, and student union membership. Students who are registered full time in the Graduate School during the previous spring term are not required to pay the general fee. An asterisk (*) preceding the course number indicates that fees for laboratories, field trips, and incidental expenses are charged. The amount of the fee immediately follows the complete course description.

A student who finds it necessary to register after the regular registration date for each session must pay a \$10.00 late registration fee unless prior approval of the Director of Summer Session has been obtained for the delay (see p. 11).

A student who has approval to make a change in program (see definition, p. 11) after 4 p.m. on June 27 in the eight-week session, or July 7 in the six-week session, must pay a \$10.00 change of registration fee. No change in program will be permitted after 4 p.m. on July 11 for students in the eight-week session, and after 4 p.m. on July 16 for those in the six-week session, except for reasons beyond the control of the student.

GRADUATE REGISTRATION FEE. Applicants applying for admission to the Graduate School as well as to Summer Session who have never matriculated previously at Cornell must pay a fee of \$28.00 to the Graduate School in addition to the regular tuition and fees as required by the Summer Session. The Graduate School fee is used to pay the matriculation costs and covers certain expenses incidental to graduation if the student receives a degree. The fee is not refundable.

For other information concerning Graduate School regulations, see pp. 6, 7, 14 and 15.

Other Regulations Concerning Payments

Any student, graduate or undergraduate, who fails to pay his tuition, fees, and other indebtedness at the Treasurer's Office within the time prescribed by the University, will be dropped from the University. When in his judgment the circumstances in a particular case so warrant, the Treasurer may allow an extension of time to complete payments. For such an extension, the student will be assessed a fee of \$5.00. A reinstatement fee of \$10.00 will be assessed any student who is permitted to continue or return to classes after being dropped from the University for default in payments. For reasons satisfactory to the Treasurer and the Registrar, which must be presented in writing, the latter assessment may be waived in any individual case.

The amount, time, and manner of payment of tuition, fees, or other charges may be changed at any time without notice.

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 therefore are advised

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to open an account in an Ithaca bank as soon as they arrive in town, or else to provide themselves with travelers' checks, drafts on New York City banks, money orders, or other forms of credit instruments such as a bank will cash in the ordinary course of business.

Financial Aid

Normally students registered in the Summer Session are not eligible for University financial aid. In special cases, however, when the applicant is a regular full-time student at Cornell and his Summer Session program has the full approval of his faculty adviser, he will be considered for loan assistance.

There are no general University scholarships for Summer Session study.

Opportunities for student employment during the summer are so limited that students should not rely on this means of financing any part of their Summer Session expenses. More specific information can be obtained from the Office of Scholarships and Financial Aid, Room 105, Day Hall.

The Graduate School

The Graduate School is an administrative unit entirely separate from the administration of the Summer Session. *Only candidates for advanced degrees at Cornell University are registered with the Graduate School in the summertime.* Students who take course work at the graduate level in the Summer Session, but who are not candidates for advanced degrees at Cornell University, have no connection with the Graduate School.

CREDIT FOR ADVANCED DEGREES

Summer Session credit may be used for fulfillment of requirements for the following advanced degrees, under regulations of the faculty of the Graduate School: Master of Arts (M.A.); Master of Science (M.S.); Master of Science for Teachers (M.S.T.); Master of Arts in Teaching (M.A.T.); Master of Industrial and Labor Relations (M.I.L.R.); Doctor of Education (Ed.D.); and Doctor of Philosophy (Ph.D.).

When the candidate has registered in both the Summer Session and the Graduate School, the completion of eight or more hours of credit in the eight-week session, or a minimum of six hours in the six-week session, will count as one-half or two-fifths of a residence unit respectively, if approved in advance and reported as acceptable by the student's Special Committee.

Requirements for Master's degrees may, upon approval of the appropriate graduate field, be completed solely during the summer period if instruction in the chosen major and minor subjects is offered. Only two residence units for study in the Summer Session may be accepted in fulfillment of requirements for the doctorate. Upon recommendation

by the Special Committee of a student and on approval by the Dean of the Graduate School, residence may be transferred for study in one preceding Cornell Summer Session period if such study is attested to be an integral part of the graduate program subsequently undertaken.

ADMISSION

Students intending to become candidates for advanced degrees at Cornell should write to the Dean of the Graduate School, Sage Graduate Center. If an *Announcement of the Graduate School* is also wanted, the major field of concentration should be stated. Zip code must be included with applicant's address. Applications for admission to the Graduate School received prior to May 1 will be acted upon in time for the accepted candidates to register with the Graduate School and Summer Session on registration day. The Admissions Committee cannot give assurance that an application received after May 1 will receive the same consideration that it would receive if filed before that date.

REGISTRATION FEE. On admission to the Graduate School, the applicant is required to pay the sum of \$28.00 within twenty days of notification of admission, unless he has matriculated previously at Cornell (see p. 13).

REGISTRATION

Only students approved for admission in the Graduate School must register with both the Summer Session and the Graduate School. Full information and proper forms for registering in the Graduate School are to be obtained from the Graduate School desk at Lynah Hall on registration day. The registration must be completed within one week of registration day. To register, each candidate must file a Registration-of-Courses form properly approved by his Special Committee. Each new candidate must file a Nomination-of-Committee form.

Such registration is regarded in the same fashion as registration for a regular semester and affects the deadlines for fulfillment of requirements.

Candidates registered in the Summer Session who were not registered in the preceding spring term, but who expect to continue as full-time graduate students in a succeeding fall or spring term, must arrange with the Dean of the Graduate School for permission to register in the regular term.

COMPLETION OF REQUIREMENTS

Candidates for advanced degrees who expect to complete requirements and to take their final examinations at the end of the Summer Session should call at the Office of the Graduate School not later than the third week of the session for the necessary instructions and forms.

CANDIDATES IN THE FIELD OF EDUCATION

Students interested in the degrees of Master of Arts in Teaching (M.A.T.) or Doctor of Education (Ed.D.) should consult the *Announcement of Education*, which may be obtained by writing to the Announcements Office, Day Hall. The faculty of the Field of Education of the Graduate School has jurisdiction over these degrees.

Housing and Dining

HOUSING

Rooms are available in University-operated housing units for all students registered in the six-week and eight-week Summer Sessions, both graduate and undergraduate men and women. A leaflet giving detailed information on housing, *Residence Halls for Men and Women*, will be mailed by the Office of the Summer Session after admission has been approved. Rooms are furnished with desk, desk chair, desk lamp, bookcase, reading chair, chest of drawers, bed linens, (laundered by the University), blankets, and bedspread. Bed linens are replaced weekly. Daily room care, including bedmaking, is the responsibility of the occupant. The occupants also furnish their own towels and soap.

Students registered in any program of the Summer Session, who withdraw before the program is completed must terminate their occupancy of University-operated housing facilities, and officially notify the Office of the Summer Session of their intent to withdraw.

Undergraduate and Graduate Women

Undergraduate and graduate women may make application for accommodations in University residence halls if they desire.

The rates for the six-week Summer Session are \$75.00 for single occupancy and \$57.00 per person for double accommodations. For the eight-week Summer Session, the rates are \$100 for single occupancy and \$76.00 per person for double accommodations. For periods of three weeks or less, the rates are \$13.50 single and \$10.50 double occupancy per person per week or part of a week. All rates cover the cost of room only.

Students, not yet twenty-one years of age, who have not previously attended a college or university are required to live in University residence halls and to observe the hours of curfew which are: midnight, Sunday through Thursday, and 1 a.m., Friday and Saturday.

There is a head resident in the hall who, in cooperation with the staff of the Office of the Dean of Students, is concerned with the general welfare of students.

Meals can be obtained at the campus public service dining units.

Men Students

Single and double rooms will be available to both undergraduate and graduate men. Rates for the six-week Summer Session are \$75.00 for

single and \$57.00 per person for double accommodations. For the eight-week Session, the rates are \$100 for a single room and \$76.00 per person for a double. For periods of three weeks or less, the rates are \$13.50 single and \$10.50 double per person per week or part of a week. All rates cover the cost of room only.

The total educational program in the dormitories for men is under the direction of the head resident appointed by the Dean of Students Office. This head resident and other appointed dormitory staff members are concerned with life in the dormitories.

Opening and Closing Dates

Living units to be used during the six-week Summer Session will open for occupancy on Tuesday, June 24; they will close at 2 p.m., Saturday, August 9. Living units to be used during the eight-week Summer Session will be open on Sunday, June 15, and will close at 2 p.m., Saturday, August 9. *Earlier or later occupancy will not be possible under any circumstances.*

Application for Rooms

An application for a room assignment in a residence hall cannot be given consideration unless it is submitted on an official application form to the Department of Housing and Dining Services. Room application forms are distributed *only* by the Office of the Summer Session *after* admission has been approved, and each student will automatically receive one with his Summer Session registration coupons.

Assignments

Assignments for both men and women are made in order of receipt of application, and the earliest mailing date will be approximately May 15. Since requests for the six-week or eight-week Summer Session must take precedence over those for shorter periods, it may be impossible to forward actual assignments until ten days prior to short course registrations.

Room Deposits

A \$5.00 room deposit is required. A check or money order, drawn to the order of Cornell University, should be attached to the room application to ensure prompt action. *This deposit is applied towards the residence charge.*

Room deposits which accompany room application will be refunded to those students who file with the Director of Housing and Dining Services written intention to withdraw the application, provided such notice is received by June 15. *The deposit will not be refunded on cancellations received after June 15.*

Married-Student and Off-Campus Housing

The University has the policy of requiring all students to live in housing which is approved by the University Student Housing Agency.

To assist students, both married and single, to secure adequate housing, the University Student Housing Agency provides an inspection and information service. Information on properties which have University approval and approved housing *currently available* is posted for their convenience in the Off-Campus Housing Office in Day Hall, Room 223. As changes of currently available apartments occur daily, it is not practical to prepare lists.

Students wishing to sublet houses or apartments off campus, or married-student apartments operated by the University on campus, are advised to arrive in Ithaca in advance of registration in order to secure such quarters. Sublet rentals for the Summer Session range from \$65.00 to \$175 a month.

There is normally an adequate supply of rooms available in off-campus locations for the Summer Session. These rooms vary considerably in comfort, convenience, and safety. Before leasing a room careful consideration should be given such details as distance from campus and dining facilities, price, ventilation, sanitation, furnishings, and fire escapes. Arrival in Ithaca a few days in advance of registration will assure students of a better selection of off-campus rooms.

Information concerning married-student or off-campus accommodations will be mailed upon request. Address inquiries to the Department of Housing and Dining Services, Day Hall, Cornell University, Ithaca, New York 14850.

DINING SERVICES

The Student Union Building, Willard Straight Hall, offers complete cafeteria and snack bar service as do Noyes Lodge on Beebe Lake; the Martha Van Rensselaer Cafeteria; the Student Cafeteria, Statler Hall; and the Dairy Bar Cafeteria in Stocking Hall. Meals obtained in these places, or in the cafeterias, dining rooms, and restaurants near the campus, will cost approximately \$3.00 to \$4.00 per day.

Health Services

The facilities of the student medical services are available to all students officially registered in the Summer Session as follows:

FOR REGULAR EIGHT- AND SIX-WEEK SUMMER SESSION STUDENTS: (1) Unlimited visits to the Gannett Medical Clinic, 10 Central Avenue; (2) hospitalization at Tompkins County Hospital with medical care for three days for students in the eight-week session and two days for those in the six-week session; (3) emergency surgical care. This is defined as initial surgical procedures which are necessary for the immediate welfare and safety of the patient.

FOR STUDENTS REGISTERED IN SPECIAL PROGRAMS: (1) Same as (1) above for the period of registration; (2) hospitalization based upon length of registration—none if less than three weeks; if more than three weeks, graduated up to fourteen days, the maximum based on the entire Summer Session of approximately three months; (3) emergency surgical care; same as (3) above except none for students registered for less than three weeks.

If a student elects to consult a private physician, the cost of this service is not covered by the health fee.

Students who withdraw from the Summer Session terminate Health Services as of the withdrawal date.

CLINIC HOURS

Monday through Friday: 9 a.m.—5 p.m.

Saturday: 9 a.m.—12 noon

Sunday: 10–11 a.m.

Physicians are on duty at the above hours except between 12 noon and 2 p.m. weekdays. Nurses are in attendance at all times during clinic hours.

AFTER CLINIC HOURS

On a limited basis, with a nurse in attendance, the Gannett Medical Clinic will also be open 12 noon to 5 p.m. Saturdays for illness and accidents occurring after regular clinic hours. *These extra hours are not intended for conditions that could be treated during the regular hours.* Should illness or accident occur after 5 p.m. on a weekday or after 11 a.m. on a Sunday, students should call 272-6962 or 275-5211 for instruction. Extended hours are in effect for the eight-week Summer Session.

EMERGENCY SERVICE

A doctor is always available for calls of an emergency nature when an accident has occurred or when the student is too ill to come to the clinic or the hospital. (In the women's dormitories these calls should be made by the Head Resident whenever possible.) Telephone calls for this service should be made through the Gannett Medical Clinic, Ithaca 275-3493, when the clinic is open (see hours above); to Ithaca 272-6962 after clinic hours. This service is not designed to care for students in their rooms. A charge of \$5.00 in the daytime and \$10.00 at night is made for such calls.

Counseling Services

INDIVIDUAL COUNSELING. The Office of the Dean of Students, 133 Day Hall, has a trained guidance and counseling staff to serve students in personal, educational, and social areas.

FOREIGN STUDENTS. The International Student Office, 142 Day Hall, maintains a staff prepared to assist all students from other countries who may need information about living quarters, immigration matters, personal and social problems, or other questions.

Libraries

The University libraries in Ithaca comprise the Central Library, consisting of the Olin Library for graduate study and research and the Uris Library for undergraduate use, the Mann Library of Agriculture and Home Economics, the Fine Arts Library, the Business and Public Administration Library, the Engineering Library, the Library of the School of Hotel Administration, the Library of the School of Industrial and Labor Relations, the Law Library, the Physical Sciences Library, and the Veterinary Library. In addition there are numerous department libraries in the separate schools and colleges.

The union catalog, the general collection of reference books and documents, the chief bibliographical publications, and the principal series of academy and learned society publications are located in the Olin Library. Specialized reference materials will be found in the various college, school, and department libraries. The Reference Department of the Olin Library and the library staffs of the college, school, and department libraries are prepared to assist students in the effective use of the libraries and in the location of research materials.

The total library resources on the Ithaca campus exceed 3,000,000 volumes. The number of periodicals, transactions, and other serials currently received is over 30,000.

In the course of their development the libraries have acquired and have built up a variety of special collections. Illustrative of these resources are collections on the American Civil War, Abolition and Slavery, Apiculture, Botany, China and Southeast Asia, Dante, English and French Revolutions, Freemasonry, History of Science, History of Superstition, Icelandic, Joyce, Kipling, Pascal, Petrarch, Shaw, Wordsworth, and Regional History; and the University Archives.

The privilege of borrowing books for home use is granted to all students who comply with the library regulations. Presentation of the official Summer Session Registration Certificate is required when borrowing books. Stack permits for the Olin and Mann Libraries are issued to graduate students. Carrels in the stacks of the Olin, Mann, and Industrial and Labor Relations libraries are also available for assignment to graduate students upon application.

Xerox copy service for library books and periodicals and academically related materials is available in the Olin, Uris, Mann, Physical Sciences, Law, Business and Public Administration, and Engineering libraries. A schedule of the hours for all libraries on campus will be available at summer session registration desks and in the *Weekly Bulletin*.

Special Regulations

STUDENT CONDUCT

The Summer Session is administered under the same general regulations governing student conduct which apply to all other sessions of the University, with slight modifications to cover the special circumstances of the Summer Session. Students are expected to familiarize themselves with the contents of the Student Code and the Academic Integrity Code. The Codes are available at Summer Session registration and from the Office of the Dean of Students, 133 Day Hall.

The Codes, products of extensive deliberations involving students, faculty, and administration, are statements of standards and regulations necessary to ensure maximum individual freedom and the effective functioning of the University as an educational institution.

In addition, students living in University dormitories and other group residences are responsible for familiarizing themselves with the specific rules applying to their places of residence. They may obtain copies of the rules from dormitory head residents, graduate residents, and counselors.

The responsibility for administration of faculty policy with respect to student discipline shall be exercised by the office of the Dean of Students.

AUTOMOBILE REGULATIONS

The University does not encourage student use of automobiles but recognizes that in certain cases there may be important reasons why a student needs an automobile. Any person registered in a program of the Summer Session who owns, maintains, or, for his own benefit, operates a motor vehicle in Tompkins County must do the following: (1) He must register the vehicle with the Traffic Bureau of the Division of Safety and Security at the time of Summer Session registration, or within five days after bringing it to Tompkins County during the term. Parking is prohibited on the grounds of the University during this period. (2) He must pay a fee of \$1.00 and display, as directed, a registration sticker. (3) He must be legally qualified to operate a motor vehicle in New York State. (4) The vehicle must be registered in New York State or legally qualified to be operated on the highways of New York State. (5) The vehicle must be effectively insured against public liability for personal injury and property damage for the minimum of \$10,000-\$20,000-\$5,000.

Motorcycles and motor scooters must be registered and may not be used on campus during class hours. Trailers, as family units, are not allowed on any University property. Students may not park on campus from 8 a.m. to 5 p.m. Monday through Friday and from 8 a.m. to 1 p.m. on Saturday. Parking restrictions are in effect twelve months of the year.

Each student registered for any program in the Summer Session is required to complete the Division of Safety and Security IBM card at the time of registration whether or not he has a vehicle. This is

essential for the general safety and welfare of the student. The Division of Safety and Security Office is the only office on campus open twenty-four hours a day to which inquiries, in the event of an emergency, can be directed when other sources of information are closed.

The student's registration in the University is held to constitute an agreement on his part that he will abide by its rules and regulations with regard to traffic and parking or suffer the penalty prescribed for any violation of them.

The Weekly Bulletin and Calendar

The Summer Session *Weekly Bulletin* contains official notices and announcements of events of general interest to Summer Session students and faculty. As the only campus-wide information medium during the summer, it will include the weekly calendar, news items, features, and notes of general interest. The *Bulletin* will be distributed on campus each Monday of the six-week Summer Session.

Copies will be available without charge to anyone at the following places: Dairy Bar; Donlon Hall; Noyes Lodge; Home Economics Cafeteria; Willard Straight Hall, Main Desk; Statler Lobby, Main Desk; Summer Session Office, B-20 Ives Hall; Risley Hall; University Halls; and Information Desk in Day Hall.

Extracurricular Activities

The Summer Session, in cooperation with departments and agencies of the University, arranges a balanced extracurricular program of public events and recreation designed to enrich the campus experience of its students, especially those who are not at the University during the academic year.

WILLARD STRAIGHT HALL

The University union building is reserved for the students, faculty, staff, alumni, and guests of Cornell University as a campus gathering point and a center for social, cultural, and recreational activities. It provides meal service; snacks for late afternoon and evening; lounges, rooms for student meetings; the University Theatre; a billiard and game room; a barber shop for men; a browsing library well stocked with books, periodicals, and newspapers; a craftshop; a music room; and an art lounge. On the upper floors of the Hall are sleeping rooms used principally by parents and guests of students, by alumni, and by guests of the University.

In addition to regular meal service, the Willard Straight dining department is equipped to serve informal parties, teas, receptions, private luncheons and dinners, and barbecues, and to provide picnic box lunches.

The Main Desk is a focal point for campus information and services. Newspapers, current magazines, postcards, candy, and cigarettes, as well as tickets to many campus functions are available. The daily tours of the campus originate here. Travel information and road maps may be procured from the desk.

The Willard Straight Summer Session Committee arranges lectures, trips, nature walks, square dances, art exhibits, open houses, tournaments, luncheons with distinguished faculty, receptions, and dances. Students are encouraged to submit new program ideas and to participate on the committee.

The right is reserved to request appropriate identification from persons using the Hall and its facilities, and participating in its program.

CONCERTS

The 1969 Summer Session Concert Series will consist of evening concerts in air-conditioned Alice Statler Auditorium on Monday, July 7, and on Thursdays, July 10, 17, 24 and 31. The opening concert will present Kenneth Gilbert, harpsichord virtuoso, playing Cornell's two-manual Hubbard Harpsichord. For the second concert, Mr. Gilbert will be joined by John Hsu, distinguished violist da gamba. Performing artists for the other concerts will be announced at Registration.

In addition to the Series concerts, an organ recital will be given in Bailey Hall by Professor Donald R. M. Paterson, University Organist, on Sunday evening, July 20.

RELIGIOUS SERVICES

Sage Chapel

Nondenominational services (ecumenical insofar as possible) are held in Sage Chapel throughout the academic year. Since 1875 Sage Chapel has been the center of worship for the Cornell community. In that year an endowment fund was established by the Dean Sage family for the purpose of bringing religious leaders and speakers to the Chapel. This fund was later augmented by the Thorp family. Outstanding clergymen and laymen—Protestant, Catholic, Jewish, and those from other religious traditions—preach in Sage Chapel during the academic year. Also, directors and chaplains of Cornell United Religious Work lead the services each week and preach from time to time throughout the year. During the Summer Session period a similar series is provided in the Chapel at 11 a.m. on the six Sundays, June 29–August 3 inclusive. Information about other religious services on campus and in Ithaca may be obtained in Anabel Taylor Hall Information Office, Room 118, or by calling Extension 4214.

Cornell United Religious Work

CURW serves as a nonacademic division of religious affairs in the University, with offices in Anabel Taylor Hall. The united program was

founded in 1869 and took its present name in 1929 as an interfaith organization. University chaplains, representing major religious faiths, provide leadership, counseling, and opportunities for worship, study, and service in the various traditions. In addition, they work closely with the CURW Directors and Board in developing an extensive and flexible program of interfaith projects, conferences, lectures and noncredit courses which are open to all without regard to religious affiliation.

THE COMMONS. A coffeehouse facility in Anabel Taylor Hall is open each evening except Sunday during Summer Session. It is an art-form center and also contains a small library in contemporary theology. Films, folk-singing, poetry reading, and related programs are part of the informal fare between 8 p.m. and 11 p.m. Monday through Thursday, and from 8 p.m. until midnight on Friday and Saturday.

Summer Session Choir

Music for the Sage Chapel services is provided by the Summer Session Choir (Professor Thomas A. Sokol, Choirmaster) and by the University Organist (Professor Donald R. M. Paterson). The Choir rehearses in Sage Chapel on Tuesdays at 7:15 p.m., and on Sunday mornings at 9:30 a.m. The first rehearsal will be held on Sunday, June 29. All students and interested persons are invited to participate.

PUBLIC LECTURES

A wide variety of lectures is available to all students in the Summer Session as well as to members of the University community at large. The Summer Session itself sponsors a series of weekly lectures on topics of general interest. The Student Union, Willard Straight Hall, also sponsors a general interest series as does the Commons in Anabel Taylor Hall. In addition various departments, such as Physics, sponsor lectures of more specialized interest. As a result there is usually a choice of four or five lectures in a typical week during the Summer Session period.

SUMMER THEATRE

The summer program of the Department of Theatre Arts is organized to offer a variety of perspectives on the contemporary theatre. The course offerings, as well as the production work on the summer season of plays, and the final production of these plays in repertory, have been designed as an integrated experience of the contemporary theatre.

The Cornell Summer Repertory Theatre is composed of professional actors and graduate and undergraduate acting students under the direction of the University Theatre staff. This company will offer a summer season of contemporary drama chosen from such plays as Stoppard's *Rosencrantz And Guildenstern Are Dead*; Schwartz's *The Naked King*; Witkiewicz's *The Crazy Locomotive*; Hildesheimer's *Nightpiece*; Ionesco's *Exit The King*; Weiss's *The Investigation*, Brecht's *The Exception And The Rule*; Arden's *The Workhouse Donkey*.

Undergraduate and graduate credit is available to qualified students in Theatre Arts 343, *The Theatre of Ideas and the Theatre of Cruelty*; and Theatre Arts 344, *Production Approaches in Contemporary Theatre*.

Details of participation in the Summer Theatre program—for academic credit or on an extracurricular basis—may be obtained from Professor James H. Clancy, Summer Theatre, 104 Lincoln Hall, Cornell University, Ithaca, New York 14850.

ART EXHIBITS

Andrew Dickson White Museum of Art

Cornell's Museum of Art continues to present a program of temporary exhibitions in addition to housing the University art collections.

During the summer of 1969 several special loan exhibitions will be featured. There will also be on view selections from the Museum's Asian, contemporary, and graphic arts collection.

The Museum is open daily, except Monday, from 11 a.m. to 5 p.m.; Sunday from 1 to 5 p.m.

Van Rensselaer Art Gallery

Exhibits of current interest, including painting, sculpture, printmaking, design, crafts, and architecture, are on display in the Housing and Design Art Gallery on the third floor of Martha Van Rensselaer Hall (Room 317). Students, faculty, and visitors are cordially invited to visit these exhibits. The Gallery is open Monday through Friday from noon to 5 p.m.

SPORTS

Softball diamonds on Upper Alumni Field, tennis courts conveniently situated around the campus, and the eighteen-hole University Golf Course on Warren Road are available for the use of Summer Session students. A gorge at one end of Beebe Lake on the campus forms a natural swimming pool where two guards are on duty every day of the six-week session from 1 to 6 p.m.

Private lessons in golf, tennis, and swimming, and an intramural softball league are sponsored by the Department of Physical Education and Athletics.

The gymnasium in Teagle Hall offers facilities to male students for basketball, volleyball, and general workouts Monday through Friday from 9 a.m. to 5 p.m. Presentation of the official Summer Session Registration Certificate is required for admittance.

Women students may use the gymnasium in Helen Newman Hall from 1 to 5 p.m. Monday through Friday. Equipment is available for badminton, basketball, and volleyball. Students must furnish their own gymnasium shoes.

Grumman Squash Courts

Facilities for squash and handball are available daily to male students. Participants must furnish their own game equipment. Presentation of the official Summer Session Registration Certificate is required for admittance.

Swimming

Swimming facilities in Teagle Hall pool will be available for male students Monday through Friday each week from 12 to 2 p.m. Students will be admitted upon presentation of the official Summer Session Registration Certificate. A towel may be obtained upon presentation of the Registration Certificate.

Women students may use the Helen Newman pool from 1 to 2 p.m. and from 3 to 5 p.m. Monday through Friday. Towels and suits are provided, but students must furnish their own bathing caps. From 3 to 5 p.m. a woman student may be accompanied by a male guest.

Intramural Softball League

Groups or individuals who wish to participate in softball competition should see Mr. Peter Carhart, 275-4065.

Private Lessons

The Department of Physical Education and Athletics sponsors private lessons in golf, tennis, and swimming.

Tennis: Hours to be arranged. Call Mr. Alf Ekman, 275-3653 or 272-8303.

Golf: Hours and instructor in charge to be announced. Call Mr. George Hall at the University Golf Course, 275-3361.

Swimming: Hours to be arranged. See Mr. Peter Carhart at Teagle Hall or call 275-4065.

Sports-Fitness School for Boys

Boys, 7 to 14 years of age, will be given an opportunity to take part in the Cornell Sports-Fitness School. It will be operated for five weeks, beginning June 30 and ending August 1, on the University athletic fields and at Teagle pool. The program is directed by Cornell Swimming Coach, Peter S. Carhart. A fee will be charged. Applications may be obtained at the Physical Education Office in Teagle Hall.

Summer-Ithaca

A non-profit organization staffed by volunteers and beginning its ninth year of service to the community, Summer-Ithaca seeks to encourage the performing and visual arts for the entertainment,

recreation, and participation of residents and visitors during the summer months.

A "Calendar" of varied events of interest to residents and visitors is published and distributed free of charge by Summer-Ithaca, a community organization, and the Ithaca Chamber of Commerce. Cornell University cooperates in developing this program of events. The scope of activities includes theatre, concerts, lectures, films, exhibits, and recreation, designed to appeal to a wide range of ages and interests. All events, many without charge, are open to Summer Session students and add to the attractiveness of summer in Ithaca.

Anyone interested in participating or contributing to any of these programs is asked to contact Mr. Jerry Schickel, AR2-3420 or AR 3-7203.

SCHEDULE OF COURSES

Course offerings of the Summer Session are organized and described on the following pages under three classifications: the Eight-week Session, the Six-week Session, and Special Programs, with cross reference to those offerings which apply to more than one classification.

The courses of instruction are listed alphabetically by department with few exceptions. For offerings in particular subject fields consult the Index.

Because of demands that may be placed upon the instructing staff, it is occasionally necessary to substitute an instructor for one named in the course descriptions. Changes in instructors prior to registration will be listed in the *Supplementary Announcement*, which is distributed to students on registration day.

The Director reserves the right to cancel any course for which, through unforeseen circumstances, satisfactory instruction cannot be provided.

UNIT COURSES, those of less than six weeks in length, are indicated by a *u* following the course number, and their dates are given in the course descriptions. (See p. 12 for tuition charges.)

COURSES REQUIRING LABORATORY OR OTHER FEES are marked by an asterisk (*). The course fee usually appears at the end of the course description.

CLASS SCHEDULES. For most courses, classes will meet five times a week, Monday through Friday, with no classes on Saturdays, for the period of the session or special program. The hours of class meetings are contained in the course descriptions. Courses in the eight-week session normally meet for fifty minutes daily. Courses in the six-week session normally meet for seventy-five minutes daily except those carrying two credit hours. They meet for fifty minutes daily.

MEETING PLACES of courses are given in the course descriptions. Any additions or changes in room assignments will be listed in the *Supplementary Announcement*, which is distributed to students on registration day.

EXAMINATIONS. With a few exceptions, final examinations for all courses in the eight-week and six-week sessions will be held on Thursday, August 7, and Friday, August 8, at the hours indicated by the schedule on p. 29. The usual classrooms will be used unless a change is announced by the instructor.

Deviations from the schedule on p. 29 will be permitted only if all class members and the instructor agree on the change and it has been determined that no student in the class has a conflict in time. The Summer Session Office should receive notification of any changes in schedules.

In courses in which no examination is to be given, an announcement to that effect will be made by the instructor. In those cases, the last

meeting of the class will be held at the time normally scheduled for the examination.

EXAMINATIONS WILL BE HELD AS FOLLOWS:

8:00 A.M. classes, Thursday at 8:00.
 9:00 and 9:30 A.M. classes, Friday at 8:00.
 10:00 A.M. classes, Thursday at 10:30.
 11:00 and 11:30 A.M. classes, Thursday at 2:00.
 12:00, 12:30, and 1:00 P.M. classes, Friday at 10:30.
 1:40 and 2:00 P.M. classes, Friday at 2:00.

EXCEPTIONS. For all unit courses in either half of the eight- or six-week sessions, the final examinations will be on Friday.

EIGHT-WEEK SESSION

June 16–August 8

Any student registering in the eight-week session may enroll in courses in the six-week session providing there is no conflict in the time schedule of classes. Students taking courses in both sessions will register for their *entire* program on *Monday, June 16*, the eight-week registration day. Each student must report to Room 117, Ives Hall, at a time during the day which will not conflict with attendance in the first class meeting of any course in his program, and between the hours of 8:30 A.M. to 4:30 P.M.

For other general information, see pp. 5–27.

ENGINEERING

Electrical Engineering

Eng. 242. ELECTRICAL SCIENCE II (U)

Three hours credit. Prerequisite, Eng. 241. Lectures M T W Th F 10 A.M.; and W 7:30–10 P.M. or S 9 A.M.–12 noon, if there are no conflicts. Phillips 219.

An introduction to modern electrical engineering. Simple models are developed for a wide variety of electrical devices, and interactions between several devices are considered. Analytical and graphical techniques for calculating responses to various excitations of simple electrical systems containing these devices are included. Indicative of the types of systems considered are: networks of linear resistances and capacitances subjected to steady and sinusoidal excitations; circuits of triode and transistor amplifiers; inductive systems, both linear and nonlinear, such as transformers and elementary electromechanical transducers; and simple distributed systems such as transmission line and resonators. Throughout the course, emphasis is placed upon the physical principles underlying system behavior.

Engineering Cooperative Program

See Special Programs of the Summer Session, p. 70.

Engineering Short Courses

See Special Programs of the Summer Session, pp. 71 to 72.

Modern Engineering Concepts for Technical Managers

See Special Programs of the Summer Session, p. 72.

Materials Science and Engineering

Eng. 6211. MATERIALS SCIENCE (U)

Three hours credit. Prerequisite, Eng. 6210 or its equivalent. Lectures M T W Th F 9-9:50 a.m., Bard 140. Laboratory W 2-4:30 p.m. and M 7:30-10 p.m.; or S 9 a.m.-12 noon, if there are no conflicts. Kimball 215.

Thermodynamics and Equilibrium: Laws of thermodynamics; chemical and physical reactions; phase equilibria, electrochemical systems, thermodynamical and statistical mechanical models of solutions, equilibrium defects, surfaces.

Kinetics: Reaction rates in gases and condensed systems; atomic and ionic transport processes; kinetics of phase transformation.

Properties: Mechanical, electrical, and magnetic properties of materials with emphasis on structure-sensitive properties.

Theoretical and Applied Mechanics

Eng. 212. MECHANICS OF RIGID AND DEFORMABLE BODIES II. (U)

Four hours credit. Prerequisite, Eng. 211 or its equivalent. Lectures and recitations M T W Th F 11 A.M.; computing-laboratory M Th 2-4:30 P.M. Thurston 202.

Inelastic behavior. Energy methods in mechanics. Principles of particle dynamics. Theory of oscillations. Kinematics of rigid body motion. Dynamics of systems of particles. Kinetics of rigid bodies. Text: Housner and Hudson, *Dynamics*, Second Edition.

MATHEMATICS

Math. 192. CALCULUS FOR ENGINEERS (U)

Four hours credit. Prerequisite, Math. 191 or its equivalent. M T W Th F 8-9:15. White 310.

Transcendental functions, technique of integration and multiple integrals, vector calculus, analytic geometry in space, partial differentiation, applications. Text: Thomas, *Calculus and Analytic Geometry*, chaps. 7-15.

Math. 294. ENGINEERING MATHEMATICS (U)

Three hours credit. Prerequisite, Math. 293. M T W Th F 8-8:50. White B-29.

Linear differential equations, quadratic forms and eigenvalues, differential vector calculus, applications. Text: Block, Cranch, Hilton, Walker, *Engineering Mathematics, Vol. II*.

For other listings of the Department, see pp. 52-53.

MODERN FOREIGN LANGUAGES AND LITERATURE

Portuguese

See Latin American Language and Area Program, p. 76.

Quechua

Quech. 101S. ELEMENTARY QUECHUA (U,G)

Eight hours credit. Twenty hours of instruction each week. M T W Th F 8-10, 11-1. Lincoln 304. Mr. Solá and staff.

An intensive introductory course in the Cuzco dialect of Quechua, emphasizing auditory and speaking skills.

For listings of other languages see Classics, p. 36; Modern Foreign Languages and Literature, pp. 53-57.

PHYSICS

*Physics 122. INTRODUCTORY ANALYTICAL PHYSICS II (U)

Three hours credit. Prerequisites, Physics 121 and at least simultaneous registration in Math 192, or consent of the instructor. Lectures, T Th 9:30-10:45. Rockefeller A. Recitations, M W F 9:30-10:45, Rockefeller 103. Laboratory, T 2-5. Rockefeller 252. Mr. Newhall.

Rotation of rigid bodies. Simple harmonic motion. The properties of the fundamental forces: gravitational, electromagnetic and nuclear. At the level of *Introductory Analytical Physics* (4th ed.) by Newhall. Fee, \$5.00.

Physics 234. INTRODUCTORY ANALYTICAL PHYSICS IV (U)

Three hours credit. Prerequisites, Physics 233 and at least simultaneous registration in Math 294, or consent of the instructor. Lectures, W F 12-12:50. Rockefeller A. Recitations, M T Th S 12-12:50. Rockefeller 104. Mr. Edwards.

Modes of oscillation, waves, polarization, interference and diffraction. Selected topics from contemporary physics such as relativity, quantum effects, atomic and x-ray spectra, nuclear structure and reactions, and solid state physics. At the level of *Fundamentals of Optics and Modern Physics* (1968) by Young, and of *Elementary Modern Physics* (1960) by Weidner and Sells.

*Physics 236. LABORATORY TO ACCOMPANY PHYSICS 234 (U)

One hour credit. Prerequisite, Physics 235 and coregistration in Physics 234, or consent of the instructor. T F 2-5. Rockefeller 30. Mr. Lee.

Experiments in optics and contemporary physics. Fee, \$5.00.

*Physics 500. INFORMAL GRADUATE LABORATORY (G)

One to three hours credit. Prerequisites, Physics 236, 310 or 360, and a junior-senior course in contemporary physics (e.g., Physics 436), or consent of the instructor. Laboratory open M T W Th F 2-5. Clark 308. Mr. Browman and staff.

32 SIX-WEEK SESSION

This laboratory is associated with the Physics 510 laboratory; see topics in Physics 510. Fee, \$5.00 per credit hour.

*Physics 510. ADVANCED EXPERIMENTAL PHYSICS (G)

Three hours credit. Prerequisites, Physics 410 or 500, and 443, or consent of the instructor. M T W Th F 2-5. Clark 308. Mr. Browman and staff.

About seventy different experiments are available among the subjects of mechanics, acoustics, optics, spectroscopy, electrical circuits, electronics and ionics, heat, x rays, crystal structure, solid state, cosmic rays, and nuclear physics. The student is expected to perform about five or six experiments, selected to meet his individual needs. Stress is laid on independent work. Fee, \$15.00.

Physics 574. INTERMEDIATE QUANTUM MECHANICS (G)

Four hours credit. Prerequisites, Physics 562, 572, and Math 416, or consent of the instructor. M T W Th F 11-12:15. Rockefeller 103. Two additional hours each week to be arranged. Mr. Schmidt.

Discussion of various applications of quantum mechanics such as collision theory, theory of spectra of atoms and molecules, theory of solids, emission of radiation, and relativistic quantum mechanics. At the level of *Quantum Mechanics of One-and Two-Electron Atoms* by Bethe and Salpeter.

For other offerings of the Department, see pp. 58-59, and also Special Programs of the Summer Session, p. 64.

SIX-WEEK SESSION

June 25-August 8

For registration procedures and other information, see pp. 5-27.

Students admitted to this session may elect a course from among the Special Programs, listed on pages 63 to 80, if granted permission by the Program Director and if there is no conflict in the time schedule of classes. Tuition for such courses is at the rate charged in the six-week session.

AGRICULTURAL ECONOMICS

(See pp. 64, 65.)

AGRICULTURAL EDUCATION

(See pp. 64-66.)

AGRICULTURAL ENGINEERING

(See p. 65.)

ANTHROPOLOGY

Anthro. 101 CULTURAL ANTHROPOLOGY (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 283. Mr. Gregor.

A study and comparison of the types of learned, shared, and transmitted behavior patterns and ideas, by means of which men of various periods and places have dealt with their environment, worked out their social relations with their fellow men, and defined their place in the cosmos. An inquiry into human nature and its expression in man's institutional and intellectual creations.

Anthro. 102. THE EVOLUTION OF MAN (U,G)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 283. Mr. Kennedy.

An exploration of the archaeological and fossil record of human evolution; emphasis is on the varied ways of uncovering, interpreting, and understanding man's biological and cultural development from the origin of man to the rise of civilization.

Anthro. 324. MYTH, RITUAL AND SYMBOL (U,G)

Four hours credit. M T W Th F 8:00-9:15. McGraw 305. Mr. Fox.

A survey of various approaches to the understanding of myth, cosmology, ritual, and esthetic symbolism, drawing upon anthropological, psychological, and philosophical sources. The ideas of certain literary critics and historians of religion will also be considered. An attempt will be made to isolate the basic formal principles of symbolic structures, to analyze the nature and sources of the affective and cognitive aspects of symbolic meaning, and to define the social and cultural functions of the major categories of symbolism.

Anthro. 372. LIVING RACES OF MAN (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 164. Mr. Stini.

A survey of the major features of phenotypic variation in human populations today. Attention is directed to the evolutionary factors of race formation operating through time and across geographical lines, to the racial histories of particular human groups, and to the development of concepts about race in Western thought.

Anthro. 441. CULTURE AND SOCIETY IN SOUTH ASIA (U,G)

Four hours credit. M T W Th F 9:30-10:45. McGraw 305. Mr. Mahar.

A survey of the social, economic, political, and religious institutions of the countries of South Asia. Both the traditional cultures and the changes which are taking place are considered.

Anthro. 545. SEMINAR: SOUTH ASIA (U,G)

Two hours credit. Time of class meeting, 2 p.m., days to be arranged. McGraw 305. Mr. Mahar.

For graduate students who are taking Anthro. 441, and for other graduate students with similar preparation. The seminar will be adapted to the interests of the students enrolled. Suggested topics will include: village life in South Asia, Indian national character, the impact of the West on Indian social and intellectual traditions, the origin and growth of Indian nationalism, problems of social and economic change, parliamentary institutions in India, etc.

(See also Area Study Programs, p. 67.)

ARCHITECTURE

(See Special Programs, pp. 66, 67.)

ART

History of Art

(See pp. 48-49.)

Painting, Sculpture, Graphics

(See Summer Studios in Art, pp. 79, 80.)

BIOLOGICAL SCIENCES

*Biol. Sci. 101. GENERAL BIOLOGY (U)

Three hours credit. Registration permitted only to students who register also for Biol. Sci. 102. Lectures, M T W Th F 9 and 10:15. Plant Science 233. Laboratory, M T W Th F 1:30-4:30. Roberts 392. Mrs. McFadden and staff.

Designed for students intending to specialize in some aspect of biology or biochemistry, and also for those planning to major in other subjects (such as the social sciences or the humanities) but who want to obtain a thorough knowledge of the phenomenon of life as part of their general education. Plant and animal materials are considered together rather than in separate units. Course 101 covers cellular biology, the biochemistry of metabolism, physiology and anatomy, and behavior. Course 102 includes genetics, developmental biology, evolutionary theory, the biology of populations and communities, the origin of life, and the evolutionary patterns in the plant and animal kingdoms. Each topic is considered in the light of modern evolutionary theory. The laboratory work is designed to give first-hand experience with the materials discussed in lecture. Fee, \$10.

*Biol. Sci. 102. GENERAL BIOLOGY (U)

Three hours credit. A continuation of Biol. Sci. 101, and open only to persons concurrently registered. Time and place of class meetings same as for Biol. Sci. 101. Mrs. McFadden and staff.

For course description see Biol. Sci. 101. Fee, \$10.

*Biol. Sci. 262. BIOLOGY OF THE HONEY BEE (U,G)

One hour credit. Prerequisite, first-year biology course (Biol. Sci. 103-104). Fifteen laboratories, two per week, plus three evening sessions to be scheduled. Limited to ten students. Caldwell Hall 272 and the Bee Laboratory. Mr. Morse.

A laboratory and field course in which the classical experiments on the vision, chemical senses, and language of the honey bee, as described by von Frisch, are repeated. Laboratories include demonstration of the alarm odor, sex attractant, swarm orientation, and observation of the growth of a normal colony of bees both in an observation hive and a standard bee hive. In addition, the study of other social insects and their nests, including wasps, bumblebees and the semisocial solitary bees. Fee, \$4.

***Biol. Sci. 270. BIOLOGY OF VERTEBRATES (U,G)**

Four hours credit. Prerequisite, an introductory course in biology or zoology. Lectures, M T W Th F 9:30-10:45. Rice 300. Laboratory, T W 2-5. Fernow 14. Occasional early morning field trips to be scheduled in lieu of regular laboratory. Additional laboratory M 2-5. Fernow 14. Mr. Brower.

Introduction to the evolution, classification, and natural history of vertebrate animals. Laboratory work will include studies on structure, classification, and identification, and various aspects of ecology and behavior. Field work will emphasize the distribution ecology, behavior, and life histories of local vertebrates, and special projects designed to introduce the student to some of the methods used in vertebrate research. Fee, \$10.

Biol. Sci. 431. PRINCIPLES OF BIOCHEMISTRY, LECTURES (U,G)

Four hours credit. Prerequisite, organic chemistry. Lectures, M T W Th F 8-10. Riley-Robb 105. Messrs. Bartholomew, Gudat, and Mikulka.

A basic course dealing with the chemistry of biological substances and their transformations in living organisms.

***Biol. Sci. 433. PRINCIPLES OF BIOCHEMISTRY, LABORATORY (U,G)**

Three hours credit. Prerequisites, quantitative analysis or permission of the instructor. Must be taken with or following Course 431. Laboratory M T W Th F 10-12:30. Wing Hall 106. Messrs. Bartholomew, Gudat, and Mikulka.

Laboratory practice with biochemical substances and experiments designed to illustrate chemical reactions which may occur in biological systems. Fee, \$20.

CHEMISTRY

Students and members of the teaching staff are required to wear safety glasses or prescribed eye protective devices in all chemistry laboratories.

***Chem. 107u. GENERAL CHEMISTRY (U)**

Three hours credit. *June 25-July 18.* Prerequisite, at least 2 units of mathematics, and one unit or more of secondary school chemistry. Registration permitted only to students who register also for Chemistry 108u. Lectures, M T W Th F 8-9:50. Recitations, T W Th 3:30-4:30. Laboratory, M T W Th F 10-1. Baker Lab. 150.

The important chemical principles and facts are covered, with considerable attention given to the quantitative aspects and to the techniques which are important for further work in chemistry. Texts: *Sienko and Plane, Chemistry, Principles and Property*; *Sienko and Plane, Experimental Chemistry* (3d Ed.). Fee, \$7.50.

***Chem. 108u. GENERAL CHEMISTRY (U)**

Four hours credit. *July 21-August 8.* Prerequisite, Chemistry 107u or its equivalent. Lectures, M T W Th F 8-9:50. Recitations, T W Th 3:30-4:30. Laboratory, M T W Th F 10-1. Baker Lab. 150.

A continuation of Chemistry 107u; serves as a prerequisite for Chemistry 236 or Chemistry 353. The laboratory includes a simplified scheme of qualitative analysis. Texts: as listed above for Chemistry 107u. Fee, \$7.50.

Chem. 353. ELEMENTARY ORGANIC CHEMISTRY (U,G)

Four hours credit. Prerequisite, Chemistry 104 at a grade of C-, or 108 or 116, or their equivalent. Chemistry 355 must be taken concurrently with

36 COMPARATIVE LITERATURE

Chemistry 353. Primarily for students in the premedical and biological curricula. The student should determine the entrance requirements for the particular medical school he wishes to enter. Lectures, M T W Th F 8-9:50.

An integrated study of aliphatic and aromatic organic compounds, their occurrence, methods of preparation, reactions, and uses. The relationship of organic chemistry to the biological sciences is stressed. Text: Morrison and Boyd, *Organic Chemistry* (2d Ed.).

*Chem. 355. ELEMENTARY ORGANIC LABORATORY (U,G)

Two hours credit. Must be taken with Chemistry 353. Laboratory, M T W Th F 10-1. Baker Lab. 250.

Laboratory experiments on the preparation and reactions of typical aliphatic and aromatic organic compounds. Fee, \$15.00.

CITY AND REGIONAL PLANNING

(See Special Programs, pp. 68-69.)

CLASSICS

Greek

Greek 101. GREEK FOR BEGINNERS (U)

Three hours credit. M T W Th F 9-10:15 and 11-12:15. Goldwin Smith 124. Mr. Spofford.

Introduction to Attic Greek. Designed to enable the student to read the ancient authors as soon as possible. Must be taken with Greek 103.

Greek 103. ATTIC GREEK (U)

Three hours credit. Same time schedule as Greek 101. Mr. Spofford.

Readings from Plato. Must be taken with Greek 101.

Latin

Latin 105. LATIN FOR BEGINNERS (U)

Three hours credit. M T W Th F 9-10:15 and 11-12:15. Goldwin Smith 120A. Mr. Tyler.

An introductory course in the essentials of the Latin language designed for rapid progress toward reading the principal Latin authors. Must be taken with Latin 106.

Latin 106. LATIN FOR BEGINNERS (U)

Three hours credit. Same time schedule as Latin 105. Mr. Tyler.

Selected readings. Must be taken with Latin 105.

COMPARATIVE LITERATURE

Comp. Lit. 201. WESTERN LITERATURE (U,G)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith 246. Mr. Wetherbee.

Study and discussion of selected books of the Western tradition: the *Iliad*,

the *Aeneid*, selections from the Bible, the *Divine Comedy*, *Paradise Lost*, and *Faust*.

Comp. Lit. 337. MEDIEVAL AND RENAISSANCE LITERATURE (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 246. Mr. Wetherbee.

The emergence of modern attitudes toward love, the individual, and social institutions will be considered through the study and discussion of such representative authors as Chrétien de Troyes, Gottfried von Strassburg, Guillaume de Lorris, Dante, Chaucer, Malory, Rabelais, Montaigne, Tasso, Marlowe, Shakespeare, and Donne.

CONSERVATION

NATURAL RESOURCES INSTITUTE (see p. 66)

CONSERVATION WORKSHOP (see p. 69)

ECONOMICS

Econ. 101. MODERN ECONOMIC SOCIETY (U)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 225.

Concentration on the determinants of aggregate economic activity. The main areas studied are the monetary and banking systems, the composition and fluctuations of national income, and the major determinants of economic growth—all as influenced by monetary, fiscal, and other policies.

Econ. 102. MODERN ECONOMIC SOCIETY (U)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 225.

A survey of the existing economic order with particular emphasis on the salient characteristics of the modern American economy. The concentration is on explaining and evaluating the operation of the price system as it is modified and influenced by private organizations and governmental policy.

Econ. 300. SEMINAR (U,G)

Four hours credit. Prerequisite, consent of the instructor. M T W Th F 11:00-12:15. Goldwin Smith 227.

Selected topics of current interest.

Econ. 311. INTERMEDIATE MICROECONOMIC THEORY (U,G)

Four hours credit. Prerequisite, 102 or its equivalent. M T W Th F 11:00-12:15. Goldwin Smith 264.

Analysis of the pricing processes in a private enterprise economy under varying competitive conditions and their role in the allocation of resources and the functional distribution of national income.

Econ. 312. INTERMEDIATE MACROECONOMIC ANALYSIS (U,G)

Four hours credit. Prerequisite, Economics 101 or its equivalent. M T W Th F 9:30-10:45. Goldwin Smith 264.

An introduction to the theory of national income determination and economic growth in alternative models of the national economy; the interaction and relation of aspects of these models to empirical aggregate economic analysis.

EDUCATION

The following program is presented to serve public and private school personnel and other persons interested in professional preparation and improvement.

Ed. 417. PSYCHOLOGY OF ADOLESCENCE (U,G)

Three hours credit. M T W Th F 9:30-10:45. Warren 101. Mrs. Macklin.

Designed to be of help to all who plan to work with adolescents, either as parents, teachers, or counselors—to acquaint them with adolescent development and to provide insight into the causes of adolescent behavior. The major objectives include: (1) an examination of the interrelationships among the five major areas of an adolescent's development: physical, emotional, social, moral, and intellectual; (2) a sympathetic understanding of some of the major problems of adolescence; (3) an acquaintance with research and writing in the field of adolescence; and (4) an exploration of how adults may facilitate healthy development in adolescents. May be applied toward certification of secondary school teachers and guidance counselors.

Ed. 470. EDUCATIONAL ISSUES IN A DEMOCRACY (U,G)

Three hours credit. M T W Th F 9:30-10:45. Warren 160. Mr. Szoke.

A consideration of persistent and significant educational issues facing American society and pertinent to the work of the teacher.

Ed. 472. PHILOSOPHERS ON EDUCATION (U,G)

Three hours credit. M T W Th F 8-9:15. Warren 101. Miss Peard.

Selected writings of such philosophers as Plato, Descartes, Rousseau, and Dewey will be examined in their own right and for the light they throw on the persistent problems of education.

Ed. 473. CONTEMPORARY PHILOSOPHY OF EDUCATION (U,G)

Three hours credit. M T W Th F 11-12:15. Warren 101. Mr. Gowin.

The problem of how knowledge is organized. Methods for analyzing knowledge claims of any discipline. Sample analyses of history, English literature, philosophy of education. Other fields may be selected by students for analysis and class discussion.

Ed. 499. INFORMAL STUDY IN EDUCATION (U,G)

Maximum credit, three hours. Members of the staff.

The privilege of informal study is granted to a qualified junior, senior, or graduate student, when approved by an adviser from the Education staff who is personally responsible for the study. Two purposes are sanctioned: (1) to engage in a study of a problem or topic not covered in a regular course; (2) to undertake tutorial or honors study of an independent nature in the area of the student's research interests. The program is not designed as a supplement to a regular course for the purpose of increasing the content and credit allocation of that course.

Ed. 500. SPECIAL STUDIES (G)

Credit as arranged. Members of the staff.

Limited to graduate students working on theses or other research projects. Each registration must be approved by a staff member who will assume responsibility for the work.

Ed. 511. EDUCATIONAL PSYCHOLOGY (U,G)

Three hours Credit. M T W Th F 2-3:15. Warren 101. Mrs. Yanuzzi.

Includes consideration of basic theoretical issues and relevant evidence in respect to learning, perception, cognition, motivation, ability structure, and attitudes. Trends in theory and research will be the focal points for reading and class discussion.

Ed. 545. THE CURRICULUM OF AMERICAN SCHOOLS (G)

Three hours credit. M T W Th F 12:30-1:45. Warren 101.

A survey of the basic elements involved in making curriculum decisions, and an examination of contemporary curriculum developments in elementary and secondary schools.

Ed. 548. IMPROVEMENT OF INSTRUCTION IN READING (G)

Three hours credit. M T W Th F 11-12:15. Warren 160. Mr. Pauk, Miss Wardeberg, Miss L'Amoreaux.

Pertinent research as well as the psychology and philosophy of developmental reading, study, and language skills will be examined. Emphasis will be placed on techniques and materials of instruction. For experienced teachers and administrators in elementary and secondary schools.

Ed. 555. USE AND INTERPRETATION OF TESTS IN GUIDANCE AND PERSONNEL ADMINISTRATION (G)

Three hours credit. M T W Th F 8-8:50, third hour to be arranged. Warren 160. Mr. Andrus.

Open to students in guidance or personnel administration and to classroom teachers who expect to work with standardized group tests. Deals with the historical development, use, and interpretation of aptitude tests as a basis for guidance and selection in public schools, colleges, and/or industry. Designed to meet the New York State certification requirement for guidance counselors.

Ed. 561. THEORY AND PRACTICE OF ADMINISTRATION (G)

Three hours credit. M T W Th F 9:30-10:45. Warren 260. Mr. Lortie.

The course is keyed to concepts and research findings in the social and behavioral sciences that are basic to the administration of educational organizations. Institutional and individual problems are analyzed from the viewpoint of organizational dilemmas and role conflict. Course concepts are utilized in the analysis and discussion of cases. Attention is directed to the principles of complex organizations, interpersonal relations, and sociocultural phenomena which impinge upon the educational institution and its administration.

Ed. 567. EDUCATION LAW (G)

Three hours credit. M T W Th F 11-12:15. Warren 260. Mr. Hixon.

A study of education law at the federal level, as well as particular emphasis on New York State legislation. Review and analyses of federal and state legislation, court decisions, opinions, and regulations which affect educational institutions.

Ed. 582. EDUCATIONAL AND VOCATIONAL GUIDANCE (G)

Two hours credit. M T W Th F 12-12:50. Warren 245. Mr. Bresee.

An introductory survey course which deals with the theory and practice of guidance in public schools. Designed to meet the needs of teachers, administrators, and prospective counselors. Required for provisional certification in guidance.

Ed. 584. GROUP TECHNIQUES IN GUIDANCE (G)

Two hours credit. M T W Th F 12-12:50. Warren 145. Mrs. Yanuzzi.

Methods and materials for presenting educational and occupational information to students. Theory and practice of group guidance, and counseling in a group setting.

Ed. 618. BEHAVIOR PROBLEMS IN THE SCHOOL (G,U by permission)

Three hours credit. M T W Th F 12:30-1:45. Plant Science 141. Mr. Feierstein.

Designed to deal with the application of certain principles of psychology and guidance toward the development of a clearer understanding of adjustment problems of school-age pupils, both elementary and secondary. Emphasis will be on the identification of students with special needs in the areas of social and emotional problems and developing remedial programs for these students, leading to more satisfactory adjustment within the school situation. Attention will be given to the potential "drop-out," aggressive behavior, and withdrawn behavior (school phobia). Special attention will be given to theoretical explanations as well as specific diagnosis of causes.

Ed. 668. SEMINAR IN EDUCATIONAL ADMINISTRATION (G)

Three hours credit. M T W Th F 11-12:15. Plant Science 141. Mr. Lortie.

This seminar will focus on current research on teachers and the teaching role and its implications for educational administrators. Consideration will be given to career processes, teacher interaction, rewards and costs in the profession, socialization and the implications of these topics for educational change.

See also under Special Programs:

Ed. 586u. Organization and Administration of Guidance Programs (p. 74).

Ed. 587u. Practicum in Measurement and Appraisal for Counselors (p. 74).

I.&L.R. 451u. Dynamics of Occupational Structures in Work Organizations (p. 73).

See also course offerings in Home Economics Education, Industrial and Labor Relations, Psychology, and Sociology.

Guidance courses tentatively scheduled for the Summer Session of 1970 are: Educational and Vocational Guidance; Counseling; Occupational and Educational Information; Case Studies in Counseling.

Other Programs for Teachers

Agricultural Education (see pp. 64-66).

Area Study Programs for Secondary School Teachers (see p. 67).

Cornell Conservation Workshop (see p. 69).

Home Economics Education Unit Courses (see pp. 74-75).

Latin American Language and Area Program (see pp. 76-77).

Natural Resources Institute (see p. 66).

Shell Merit Fellowship Program (see p. 79).

READING AND STUDY SKILLS

*Ed. 7u. COLLEGE READING AND STUDY SKILLS (U,G)

Noncredit. June 25-August 1. Students taking this course must be enrolled in another course in the Summer Session. Exceptions to this rule are made

for students living within commuting distance of Cornell. M W or T Th 2:00-3:30. Reading-Study Center, 304 Olin Hall. Mr. Bartlett and Mr. Houser.

The aim is the improvement of reading and study skills. In the area of *reading*, students learn to improve both their reading speed and comprehension. Students are taught how to read selectively; how to distinguish main ideas from supporting material; how to determine an author's thesis and tone; and how to comprehend scholarly and technical material. As part of their training in speed reading students will have the opportunity to work daily with the reading accelerators in the reading laboratory.

Students will also receive instruction in the basic *study skills* which are essential for efficient and effective study. Topics covered will be efficient planning and use of time, recording and remembering lecture notes, preparing for and taking examinations, research procedures and techniques, and marking textbooks and taking notes on readings.

Students may register for this course in Lynah Hall on June 25, registration day. A fee of \$52.50 will be payable at this time. For additional information, address: Mr. Walter Pauk, Director, Reading-Study Center, 304 Olin Hall, Cornell University, Ithaca, New York 14850.

ENGLISH

ENGLISH AS A SECOND LANGUAGE

(See p. 54.)

Engl. 239. THE READING OF POETRY (U)

Three hours credit. M T W Th F 8:00-9:15. Goldwin Smith 236. Mr. Marcus.

An intensive study of British and American poems by both modern and earlier writers, designed to increase subtlety and facility in explication. Particular attention will be given to the major component parts of a poem (such as structure and tone). Various critical approaches to poetry will be examined and evaluated.

Engl. 303. SPECIAL FORMS OF WRITING (U,G)

Four hours credit. M T W Th F 1:30-2:45. Goldwin Smith 248. Mr. Parker. Limited to twenty students.

Practice in the art of writing verse, narrative, and allied forms. Students will submit their own work for analysis in class discussion and in conferences, and will examine the methods and techniques of published writers.

Engl. 321. The "ESOTERIC" TRADITION IN TWENTIETH-CENTURY POETRY (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 162. Mr. Marcus.

A close study of Yeats, Pound, and Eliot, with emphasis on myth, symbol, and allusion as poetic devices and structures of meaning.

Engl. 330. MAJOR AMERICAN WRITERS SINCE THE CIVIL WAR (U,G)

Four hours credit. M T W Th F 11:00-12:15. Goldwin Smith 236. Mr. Bishop.

A survey of significant American writing from the middle of the nineteenth century to the beginning of the modern period, including the poetry of Whitman, Dickinson, and T. S. Eliot, and such novels as Henry James's *Bostonians*, Howells' *A Hazard of New Fortunes*, and Dreiser's *Sister Carrie*.

Engl. 344. MODERN FICTION: THE END OF IMAGINATION (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 160. Mr. McConnell.

A study of modern fiction, with emphasis on post-World War II writers, as a technique for revising and revaluing the Romantic ideals of creative imagination and humanistic politics which are our chief heritage from the nineteenth century. Readings will include works by Henry James, James Joyce, Ernest Hemingway, Malcolm Lowry, Norman Mailer, William Burroughs, and Thomas Pynchon.

Engl. 346. MODERN DRAMA (U,G)

Four hours credit. M T W Th F 3:00-4:15. Goldwin Smith 162. Mr. Parker.

A study of the principal modes of drama and movements in the theater from the 1890's to the present day. Particular plays by Ibsen, Chekhov, O'Casey, O'Neill, Beckett, and others will be discussed.

Engl. 348. THE LITERATURE OF BLACK IDENTITY (U,G)

Four hours credit. M T W Th F 11:00-12:15. Goldwin Smith 160. Mr. McConnell.

A survey of black writing from the days of slavery to the present, tracing the process of self-discovery by which black writers come to realize the fact of their blackness as a positive social and imaginative basis of poetic assertion. Readings will include works by Frederick Douglass, W. E. B. DuBois, Saunders Redding, Richard Wright, Ralph Ellison, James Baldwin, Malcolm X, LeRoi Jones, and Eldridge Cleaver.

Engl. 354. SCIENCE FICTION (U,G)

Four hours credit. M T W Th F 1:30-2:45. Goldwin Smith 162. Miss Russ.

A study of the leading writers of twentieth-century science fiction, both British and American, with special concentration on the period after World War II. Among the authors studied will be Wells, Asimov, and Clarke.

Engl. 368. SHAKESPEARE (U,G)

Four hours credit. M T W Th F 8:00-9:15. Goldwin Smith 248. Mr. Adams.

An intensive study of Shakespeare's poetic and dramatic art in selected comedies, histories, and tragedies. Parallel readings in Marlowe, Jonson, and Webster.

Engl. 378. SURVEY OF ENGLISH LITERARY CRITICISM (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 236. Mr. Boyd.

An introduction to the major literary critics in the English tradition, with some consideration of the classical roots of this tradition. Readings will include selections from Sidney, Dryden, Johnson, Coleridge, Arnold, T. S. Eliot, I. A. Richards, the New Critics (Wimsatt, Brooks, Empson), the Chicago Neo-Aristotelians (R. S. Crane, Elder Olson), and Northrop Frye.

Engl. 444. HAWTHORNE AND MELVILLE (U,G)

Four hours credit. M T W Th F 1:30-2:45. Goldwin Smith 236. Mr. Colacurcio.

A critical examination of the major works of Hawthorne and Melville in the context of nineteenth-century American culture.

Engl. 920. RESEARCH AND GUIDANCE (G)

By arrangement with Mr. Levy.

GEOLOGICAL SCIENCES

*Geol. Sci. 101u. INTRODUCTORY GEOLOGICAL SCIENCE (U)

Three hours credit. *June 25 to July 18*. Registration limited to 25 students. Lectures, M T W Th F 9:30–11:20. McGraw 165. Laboratory M T W Th 1:30–4. McGraw 265. Mr. Cole and assistant.

An introduction to geological science designed to give general students a comprehensive understanding of earth materials, processes, features, and history. Field trips during certain laboratory periods. Text: Leet and Judson, *Physical Geology*; Geology 101 Laboratory Manual. Fee, \$10.

*Geol. Sci. 102u. INTRODUCTORY GEOLOGICAL SCIENCE (U)

Three hours credit. *July 21 to August 8*. Prerequisite, Geological Science 101 or its equivalent. Registration limited to twenty-five students. Lectures, M T W Th F 9:30–11:20. McGraw 165. Laboratory, M T W Th 1:30–4. McGraw 265. Mr. Hodgson and assistant.

Continuation of Geological Science 101, the last half of the course being devoted to the principles of interpretation of earth history; evolution of continents, oceans, mountain systems and other features; and development of organic life. Field trips during certain laboratory periods. Text: Leet and Judson, *Physical Geology*; Dunbar, *Historical Geology*; Geology 102 Laboratory Manual. Fee, \$10.00.

GOVERNMENT

Gov. 101. AMERICAN GOVERNMENT (U,G)

Three hours credit. M T W Th F 8–9:15. West Sibley 318. Mr. Lewis.

A general introduction to American national government and politics. Emphasis will be placed on historical development, organization, powers, practical working, and problems of federalism.

Gov. 203. INTRODUCTION TO POLITICAL THEORY (U,G)

Three hours credit. M T W Th F 9:30–10:45. West Sibley 318. Mr. Bloom.

A survey of the development of Western political theory from Plato to the present. Readings from the work of the major theorists and an examination of the relevance of their ideas to contemporary politics will be stressed.

Gov. 316. THE AMERICAN PRESIDENCY AND CONGRESS (U,G)

Four hours credit. M T W Th F 11–12:15. West Sibley 101. Mr. Lewis.

Analysis of the office and powers of the President, his relations with the Congress, and of the operations of the Congress.

Gov. 333. GOVERNMENT AND POLITICS OF THE SOVIET UNION (U,G)

Four hours credit. M T W Th F 9:30–10:45. West Sibley 101. Mr. Marantz.

An introduction to the workings of the Soviet political system, especially in the contemporary period.

Gov. 344. GOVERNMENT AND POLITICS OF SOUTHEAST ASIA (U,G)

Four hours credit. M T W Th F 11–12:15. West Sibley 318. Mr. Silverstein.

An intensive examination of political developments in this area since 1945. Particular attention will be given to nationalism, religion, militarism, foreign influences, race, and politics. Although the several countries in the area will be considered in relation to all the questions, major attention will be given to five countries—Vietnam, Burma, Thailand, Malaysia, and Indonesia.

44 HISTORY

Gov. 372. INTERNATIONAL RELATIONS (U,G)

Four hours credit. M T W Th F 8-9:15. West Sibley 101. Mr. Marantz.

An analysis of the basic issues, concepts, contents, and methods which characterize relations among states. The overall frame of reference will consist chiefly of theories, practices, and institutions developed since World War II.

Govt. 462. THE ROOTS OF POLITICAL IDEALISM (U,G)

Four hours credit. T Th 2-5. West Sibley 318. Mr. Bloom.

A study of the sources of utopianism, particularly in the writings of Plato and Aristotle.

Govt. 644. SEMINAR: SOUTHEAST ASIA (G)

Two hours credit. Time of class meeting 2 p.m. Days to be announced. Mr. Silverstein.

For graduate students who are taking Govt. 344, and for other graduate students with similar preparation.

An intensive examination of the politics of two countries, Malaysia and Burma, with specific concentration upon the problems of ethnic integration and racial politics.

(See also Area Study Programs, p. 67.)

HISTORY

Hist. 216. HISTORY OF THE UNITED STATES, 1865 TO THE PRESENT (U,G)

Three hours credit. M T W Th F 9:30-10:45. West Sibley B-1. Mr. Adams.

A general survey of American history from Reconstruction to the present.

Hist. 308. HISTORY OF ENGLAND SINCE 1688. (U,G)

Three hours credit. M T W Th F 9:30-10:45. West Sibley 102. Mr. Ralls.

The development of Parliamentary and Cabinet government, the Industrial Revolution, the Empire, and the development of the Welfare State.

Hist. 320. LATIN AMERICAN HISTORY SINCE INDEPENDENCE (U,G)

Four hours credit. M T W Th F 8-9:15. West Sibley B-1. Mr. Green.

A survey of the nineteenth and twentieth centuries, using a topical approach. Mexico, Brazil, and Argentina receive most emphasis.

(See also Latin American Language and Area Program, pp. 76-77.)

Hist. 324. HISTORY OF CHINA DURING THE NINETEENTH AND TWENTIETH CENTURIES (U,G)

Four hours credit. M T W Th F 11-12:15. West Sibley 102. Mr. Clubb.

A study of the development of modern China with emphasis on twentieth-century changes. Domestic and foreign affairs will be treated. Lectures and discussions with a program of outside reading and papers.

Hist. 353. EUROPEAN DIPLOMATIC HISTORY SINCE 1815. (U,G)

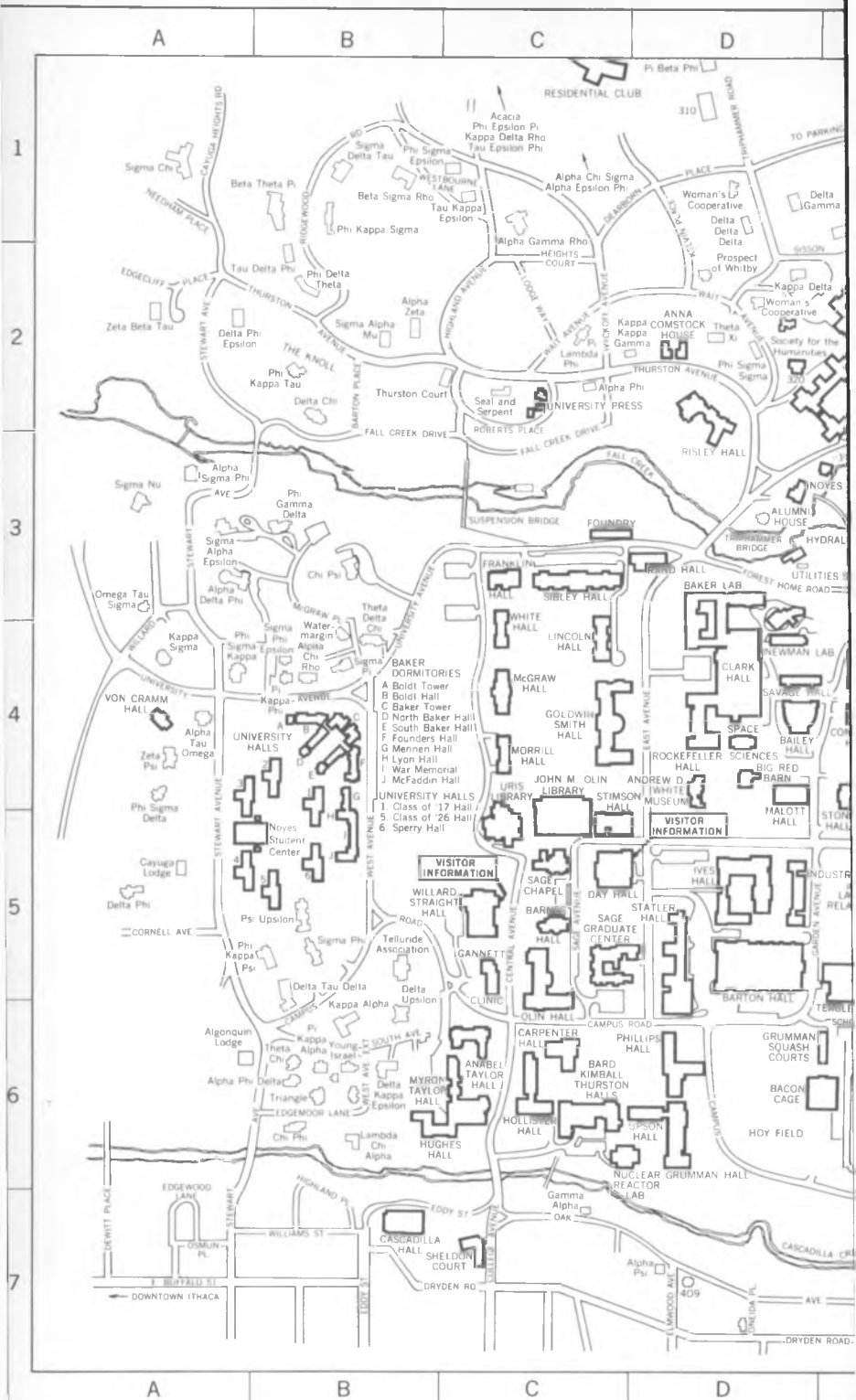
Four hours credit. M T W Th F 2. West Sibley 102. Mr. Ralls.

A survey of European diplomacy since the end of the Napoleonic Wars.

[Continued on p. 48]

KEY TO THE CAMPUS MAP ON THE FOLLOWING PAGES

- Alumni (Athletic) Fields F5
 Alumni House D3, offices, *Alumni News*
 Artificial Breeders G7
 Bacon Cage E6, athletics
 Bailey Hall D4, auditorium
 Baker Lab. D3, chemistry
 Baker Residences (men) B4-5
 Balch Halls E2, women's residences
 Bard Hall C6, materials science & engineering
 Barnes Hall C5, Campus Store, auditorium
 Barton Hall D5, military training, Safety and Security Div., gymnasium
 Beebe Lake EF3-4
 Big Red Barn D4, alumni ctr.
 Bradfield & Emerson Halls F4-5, agronomy, plant breeding, biometry, veg. crops
 Bruckner Lab. F4, poultry biology research
 Building Care Division G4
 Caldwell Hall E4, entomology (see also Comstock Hall)
 Campus Stores: Barnes C5, Sheldon Ct. C7
 Career, Summer Plans, & Placement Ctr. D5 (14 East Av.)
 Carpenter Hall C6, engineering library, admin.
 Cascadilla Hall B7, graduate students' residence
 Chemistry Research Bldg. (wing of Baker Lab.) D3-4
 Clark Hall D4, physical sciences
 Collyer Boat House, Cayuga Lake Inlet
 Comstock Hall E4, entomology (see also Caldwell Hall), limnology
 Comstock House D2, women's residence
 Cornell Quarters FG7, married students' residences
 Crescent E6, football stadium
 Dairy Cafeteria (Stocking Hall) G5
 Day Hall C5, Univ. admin.
 Dickson Hall E2, women's residence
 Donlon Hall E2, women's residence
 Emerson & Bradfield Halls F4-5 (see Bradfield & Emerson Halls)
 Fernow Hall F4, conservation
 Filter Plant J4
 Fishery Lab. H7
 Food & Laundry Services F7 (Maple Ave.)
 Foundry C3, arch. studio
 Franklin Hall C3, art, Asian studies
 Gannett Medical Clinic C5
 Goldwin Smith Hall C4, arts & sciences
 Golf Course H2
 Graphic Arts Services G6
 Greenhouses E5, H4
 Grumman Hall D6, aero. engineering
 Grumman Squash Cts. F6
 Guterman Bioclimatic Labs. J5
 Hasbrouck Apts. G1-2, married students' residences
 High Voltage Lab. H7 (909 Mitchell St.)
 Hollister Hall C6, civil engineering
 Hoy Field D6, baseball
 Hughes Hall B6, law student residence
 Humanities, Society for D2 (308 Wait Av.)
 Ind. & Labor Relations Conference Ctr. D5
 Ives Hall D5, ind. & labor relations, summer session & extramural courses, Univ. personnel office
 "Japes" E3, recreation, meetings
 Judging Pavilion G5
 Kimball Hall C6, materials processing
 Langmuir Lab., Research Park H2, neurobiology & behavior, computer services
 Library Tower C5
 Lincoln Hall C4, music, theatre arts
 Lynah Hall E5, ice skating, hockey
 Malott Hall D4, business & public admin., hospital admin.
 Mann Hall F4, agric.-home econ. library, finance office, Bailey Hortorium
 McGraw Hall C4, geological sciences, sociology, anthropology
 Minns Garden E5
 Moakley House H2, recreation, golf
 Morrill Hall C4, modern languages, psychology
 Morrison Hall H5, animal science
 Muenscher Poisonous Plants Garden H5
 Newman (Helen) Hall E2-3, women's phys. ed.
 Newman Lab. D4, nuclear studies
 Noyes Lodge D3, recreation, cafeteria
 Noyes Student Ctr. AB5, cafeteria, student activities
 Nuclear Reactor Lab. CD6
 Observatory (Fuertes) F3, astronomy
 Olin Hall C5, chemical engineering
 Olin Library (grad. & research) C4-5
 Ornithology H2 (Sapsucker Woods Rd. via Warren & Hanshaw Rds.)
 Parking Lots E1, J5
 Phillips Hall D6, elec. engineering
 Plant Science E4, genetics, development, and physiology
 Plantations Office G4
 Pleasant Grove Apts. F1-2, married students' residences
 Post Lab. H4-5, floriculture
 Poultry Virus Disease Lab. J5
 Radiation Biology Lab. H2 (Warren Rd.)
 Rand Hall D3, international studies, research in education, teacher prep.
 Research Park H2 (Brown Rd.)
 Residential Club D1, student residence
 Rice Hall F5, poultry science
 Riding Hall & Stables F6 (Rt. 366)
 Riley-Robb Hall G5, agric. engineering
 Risley Hall D2, women's residence
 Roberts Hall E4, agric. admin., biol. sciences, communication arts
 Rockefeller Hall D4, physics
 Sage Chapel C5
 Sage Graduate Ctr. C5, graduate school offices, residence
 Savage Hall D4, nutrition
 Schoellkopf Field & Hall E6, athletics
 Service Building F7 (Dryden Rd.)
 [Continued on p. 48]



F

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J

CORNELL UNIVERSITY

GEORGE JESSUP RD

PLEASANT GROVE APARTMENTS

DONTON HALL

HASBROUCK APARTMENTS

PLEASANT GROVE RD

FUERTES OBSERVATORY

BEEBE LAKE

LAER

FOREST

MANN LIBRARY

FERNOW HALL

AGRONOMY

POULTRY RESEARCH

RICE HALL

ALUMNI FIELDS

SYNCHROTRON BUILDING

RIDING HALL and STABLES

HEATING PLANT

SERVICE BUILDING

FOOD STORAGE and LAUNDRY

CORNELL QUARTERS

Veg Crops Gardens

TO HIGH VOLTAGE LABORATORY

FISHERY LABORATORY

TO POUSTRY VIRUS DISEASE and BIOCINEMATIC LABORATORIES

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TO POUSTRY VIRUS DISEASE and BIOCINEMATIC LABORATORIES

Ornithology Lab
(Turn Right on Hanshaw Road)
Lab of Radiation Biology
Airport and Research Park
Langmuir Laboratory
Moskewitz House
University Golf Club

WARREN ROAD

VILLAGE OF FOREST HOME

JUD TALLS ROAD

COMSTOCK KNOLL

PLANTATIONS and BLDG CAMP DIV

PLANTATIONS ROAD

DAIRY BAR

STOCKING HALL

WING HALL

JUDGING PAVILION

RILEY ROBB HALL

TV FILM CENTER

MORRISON HALL

KENNETH POST LAB

U.S. NUTRITION LAB

GREENHOUSES

MUENSCHER POISONOUS PLANTS GARDEN

VETERINARY

TO POUSTRY VIRUS DISEASE and BIOCINEMATIC LABORATORIES

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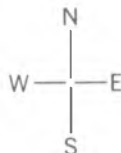
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FILTER PLANT

ROSE GARDENS

TO POUSTRY VIRUS DISEASE and BIOCINEMATIC LABORATORIES

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TO POUSTRY VIRUS DISEASE and BIOCINEMATIC LABORATORIES

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Scale in Feet

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1968

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[Key to map, continued]

Sheldon Ct. C7, Univ. Publications, Off-
Campus Housing, Campus Store
Sibley Hall C3, arch., art, and planning;
history; govt.
Space Sciences Bldg. D4
Statler Hall D5, hotel admin.
Statler Inn D5 (wing of Statler Hall),
guest rooms
Stimson Hall C5, ecology & systematics
Stocking Hall G5, cafeteria, food science,
microbiology
Stone Hall E4, education
Suspension Bridge C3
Taylor (Anabel) Hall C6, interfaith ctr.
Taylor (Myron) Hall C6, law
Teagle Hall E5, men's phys. ed., sports
Television Film Ctr. G5
Thurston Ct. BC2, student residences
Thurston Hall C6, theoretical & applied
mechanics
Toboggan Lodge E3, recreation
Triphammer Bridge & Falls, DE3
Univ. Halls B4-5, men's residences
Univ. Press C2
Upson Hall D6, mech. engineering, com-
puter science

Uris Library (undergraduate) C4-5
U.S. Plant, Soil & Nutrition Lab. H5
Utilities Section E3
Van Rensselaer Hall & North Wing E4,
home economics
Vegetable Crops Garden G7
Veterinary College J4-5
Veterinary Virus Research Lab. G7
Visitor Information Ctrs. (Day Hall,
Willard Straight Hall) C5
von Cramm Scholarship Hall A4, men's
residence
Warren Hall E4, agric. econ., rural soci-
ology
White Hall C4, mathematics
White Museum of Art D4
Willard Straight Hall C5, dining, student
activities
Wilson Synchrotron FG6
Wing Hall G5, biochemistry, molecular
biology
Women's small dormitory units: Phillips
House, 10 Sisson Pl. E1; Prospect of
Whitby, 228 Wait Av. D2; 150 Trip-
hammer Rd. D1; 302 Wait Av. D2;
Wari, 208 Dearborn Pl. D1; 310 Trip-
hammer Rd. D1.

[Continued from p. 44]

Hist. 381. AMERICAN HISTORY SINCE 1945 (U,G)

Four hours credit. M T W Th F 2. West Sibley B-1. Mr. Green.

Topics include domestic and diplomatic aspects of World War II, social reform from the Fair Deal to the New Frontier, civil liberties, and civil rights.

Hist. 384. HISTORY OF AMERICAN FOREIGN RELATIONS SINCE 1900 (U,G)

Four hours credit. M T W Th F 11-12:15. West Sibley B-1. Mr. Adams.

A survey of American foreign policy since 1900. Special emphasis is placed on the domestic, economic, political, and social changes, and the ways in which these changes influence the formulation of American foreign policy.

Hist. 490. SEMINAR IN MODERN CHINESE HISTORY (G)

Two hours credit. M T W Th F 2. Meeting place to be arranged. Mr. Clubb.

For graduate students who are taking History 324 and for other graduate students who have similar preparation. Consideration will be given to some aspects of Chinese affairs which have particular relevance to an appraisal of her place in today's world.

(See also Area Study Programs, p. 67.)

HISTORY OF ART

Hist. of Art 202. INTRODUCTION TO RENAISSANCE AND MODERN ART (U,G)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 24. Mr. Waage.

A survey of the more important paintings and sculptures by the major artists in Europe and the United States from about A.D. 1400 to the present. Those artists will be treated who have proved to be the most pioneering and inventive and who therefore have had the greatest influence upon the subsequent course of art. The purpose is not only to make the student aware

of this influence but, even more, to acquaint him with the individual styles of these masters so that he can identify their works upon sight. No practice of art is involved.

Hist. of Art 263. TWENTIETH CENTURY ART (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 24. Mr. Waage.

Modern art, primarily painting, from the Post-Impressionists to the present. An attempt is made to explain why the modern movement of art arose in the first place; then the course of its development is traced in the works of the more talented and influential artists. Since the period under study is much shorter, a more precise and thorough treatment of the individual styles of the artists and of the formal, or aesthetic, qualities of their creations is possible than in Hist. of Art 202. No practice of art is involved.

(For other art courses see Summer Studios in Art, pp. 79-80.)

HOME ECONOMICS

Child Development and Family Relationships

C.D.&F.R. 115. THE DEVELOPMENT OF HUMAN BEHAVIOR (U)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith D. Mr. Mueller.

The aim is to contribute to the beginning student's knowledge and understanding of human beings through a study of their development from infancy to adulthood. Attention is focused on the role of biological factors, interpersonal relationships, social structure, and cultural values in shaping the behavior of the developing individual. Special emphasis is given to the practical social implications of existing knowledge. (This course is required for a graduate degree in the College of Home Economics.)

(See also Psychology 101, p. 59.)

Food and Nutrition

F.&Ntr. 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS (G)

Credit and hours to be arranged. Department faculty.

For graduate students recommended by their chairmen and approved by the instructor in charge for independent, advanced work. Experience in research laboratories in the department may be arranged.

F.&Ntr. 599. MASTER'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S U grades optional. Registration with permission of instructor. Department faculty.

F.&Ntr. 699. DOCTOR'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. S U grades optional. Registration with permission of the instructor. Department faculty.

Home Economics Education

H.E. Ed. 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS (G)

Credit and hours to be arranged. Department faculty.

For students recommended by their chairmen and approved by the instructor in charge for independent, advanced work.

H.E. Ed. 599. MASTER'S THESIS AND RESEARCH (G)

Credit and hours to be arranged. Registration with permission of the chairman of the graduate committee and the instructor. Department graduate faculty.

H.E. Ed. 699. DOCTORAL THESIS AND RESEARCH (G)

Credit and hours to be arranged. Registration with permission of the chairman of the graduate committee and the instructor. Department graduate faculty.

See also under Special Programs, pp. 74-75:

H.E. Ed. 436*u*. Interdepartmental Workshop in Consumer Education.

H.E. Ed. 515*u*. Methods and Materials for Teaching Home Economics.

H.E. Ed. 540*u*. Seminar in Adult Education: The Teaching-Learning Process in Adults.

H.E. Ed. 559*u*. Evaluation.

Household Economics and Management

***H.E.M. 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS (G)**

Credit and hours to be arranged. Department faculty.

S U grades optional. For graduate students recommended by their chairmen and approved by the head of the department and the instructor in charge for independent advanced work. Fee will be dependent on the nature of the problem.

***H.E.M. 599. MASTER'S THESIS AND RESEARCH (G)**

S U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department staff.

Fee will be dependent on the nature of the problem.

***H.E.M. 699. DOCTOR'S THESIS AND RESEARCH (G)**

S U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department staff.

Fee will be dependent on the nature of the problem.

Textiles and Clothing

***T. & Clo. 500. SPECIAL PROBLEMS IN TEXTILES AND CLOTHING (G)**

Credit and hours arranged. Registration by permission. Department faculty.

For graduate degree candidates recommended by the special committee chairman and approved by the department head and the instructor for independent, advanced work. Students to assume any expense involved unless previously arranged. Fee dependent on nature of problem.

***T. & Clo. 599. THESIS AND RESEARCH (G)**

Credit and hours arranged. Registration by permission of the special committee chairman and the instructor. Department faculty. Fee dependent on nature of problem.

HOTEL ADMINISTRATION

Hotel Adm. 37. TYPEWRITING (U,G)

Two hours credit. Hotel elective. Maximum enrollment 35. M T W Th F 9-9:50. Statler 337. Mrs. Seaburg.

The personal needs of college students as well as the basic skills necessary for office jobs are met by this course in elementary typewriting. Instruction is given in the typing of business letters, reports, and tabulations. No previous typing skill is needed. Those who have had typing before may enroll in the course to improve their speed and accuracy.

(See also Special Programs, p. 76.)

INDUSTRIAL AND LABOR RELATIONS

I. & L.R. 250. SURVEY OF INDUSTRIAL AND LABOR RELATIONS (U,G)

Three hours credit. M T W Th F 9:30-10:45. Ives 112. Mr. Miller.

A survey for students in other divisions of the University. An analysis of the major problems in industrial and labor relations; labor union history, organization and operation; labor market analysis and employment practices; industrial and labor legislation and social security; personnel management and human relations in industry; collective bargaining; mediation and arbitration; the rights and responsibilities of employers and employees; the major governmental agencies concerned with industrial and labor relations.

I. & L.R. 450. PERSONNEL ADMINISTRATION IN SUPERVISION (U,G)

Three hours credit. M T W Th F 11-12:15. Ives 112. Mr. Miller.

A review of the personnel function in business and industry with emphasis on the personnel responsibilities of the line supervisor. The course is closely linked to evidence developed by behavioral sciences research. Topics for discussion will include organization theory, leadership, organization structure and change, group influences on individuals, employee motivation, and other human problems of management. Specific personnel administration functions and practices, as they are related to these problems, also will be included, e.g., selecting, inducting, training, rating, and compensating employees; and developing techniques for interviewing, adjusting complaints and grievances, and aiding in the solution of employee and supervisory problems. Selected readings, case studies, discussions, and projects.

I. & L.R. 499. DIRECTED STUDIES (U)

Credit and hours to be arranged.

For individual research, conducted under the direction of a member of the faculty, in a special area of labor relations not covered by regular course offerings. Registration normally limited to upperclassmen who have demonstrated ability to undertake independent work.

I. & L.R. 510. ECONOMIC AND SOCIAL STATISTICS (U,G)

Three hours credit. No prerequisites. Lectures, M T W Th F 9:30-10:45. Ives 217. Laboratory, two sessions each week, to be arranged. Mr. Blumen.

A nonmathematical course for graduate students in the social studies without previous training in statistical method. Emphasis will be placed on discussion of technical aspects of statistical analysis and on initiative in selecting and applying statistical methods to research problems. The subjects ordinarily

covered will include analysis of frequency distributions, time series (including index numbers), regression and correlation analysis, and selected topics from the area of statistical inference.

I. & L.R. 607. COLLECTIVE BARGAINING IN PUBLIC EDUCATION (G)

Three hours credit. Prerequisite, permission of the instructor. Enrollment limited to fifteen students. Hours to be arranged. Organization meeting Wed., June 25, 2 p.m. Ives 114. Mr. Doherty.

The seminar will consist of a study of the legal, financial, administrative, and educational problems raised by collective bargaining in the public schools. Major attention will be directed at existing statutes covering the employment arrangement for public school employees, the subject matter and administration of collective agreements, the ideological postures of teacher organizations, the resolution of negotiating impasses. Individual and group research projects will be required.

I. & L.R. 699. DIRECTED STUDIES (G)

Credit and hours to be arranged.

For individual research conducted under the direction of a member of the faculty.

(See also listing under Unit Courses in Guidance, pp. 73-74.)

Special Noncredit Seminars And Workshops

In the summer of 1969, the School of Industrial and Labor Relations is again offering a series of one-week noncredit seminars and workshops. These units are designed for practitioners, and, consequently, each will give specific emphasis to an operational area in the field. A special announcement covering the summer program of the School, including details of cost and content, may be obtained by writing to the Assistant Dean for Extension and Public Service, School of Industrial and Labor Relations, Cornell University, Ithaca, New York 14850.

MATHEMATICS

Math. 111. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. Prerequisite, three years of college preparatory mathematics. M T W Th F 8-9:15. White B-25.

Plane analytic geometry, differentiation and integration of algebraic functions, applications.

Math. 112. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. Prerequisite, Mathematics 111 or the equivalent. M T W Th F 9:30-10:45. White 310.

Differentiation and integration of algebraic, trigonometric, logarithmic, and exponential functions with applications. Plane analytic geometry. Related topics, including polar coordinates, parametric equations.

Math. 121. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. Prerequisite, a thorough knowledge of trigonometry and exceptional aptitude for mathematics. Students must also register for Math. 122. M T W Th F 9-10:45 and 2-3:15. White B-15.

Emphasis on the mastery and techniques needed for further preparation in the sciences, including engineering and advanced mathematics. Mathematics 121 and 122 together treat the following topics: plane analytic geometry through conics; differentiation and integration of polynomials with applications to rates, maxima, volumes, pressures, etc; differentiation and integration of algebraic, trigonometric, logarithmic, and exponential functions, with applications; related topics including polar coordinates, parametric equations, and vectors. Text: Agnew, *Calculus*.

Math. 122. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. Must be taken with 121. Prerequisite, current registration in 121. See description above under Math. 121.

Math. 200. BASIC CONCEPTS OF MATHEMATICS (U)

Three hours credit. Prerequisite, Mathematics 122 or its equivalent. M T W Th F 9:30-10:45. White B-9.

Primarily for undergraduates, particularly for prospective teachers and those with a cultural interest in mathematics. Set theory, logic, axiom systems, the real number field, other simple algebraic structures, cardinal numbers.

Math. 213. ANALYTIC GEOMETRY AND CALCULUS (U)

Three hours credit. Prerequisite, Mathematics 112 or the equivalent. M T W Th F 11-12:15. White B-9.

Infinite series, solid analytic geometry, partial derivatives, multiple integrals.

Math. 331. LINEAR ALGEBRA (U,G)

Four hours credit. Prerequisite, Mathematics 200 or 213 or the equivalent. M T W Th F 11-12:15. White B-25.

Vectors, matrices, and linear transformations. Affine and Euclidean spaces. Transformation of matrices. Eigenvalues. Emphasis on applications. The additional credit is earned through homework and additional reading. Even during the regular year this course only meets three times a week.

Math. 370. ELEMENTARY STATISTICS (U,G)

Four hours credit. Prerequisites, Mathematics 112 or 122 or 202. M T W Th F 9:30-10:45. White B-29.

Topics in probability which are essential to an understanding of statistics; introduction to the principles underlying modern statistical inference and the rational underlying choice of statistical methods in various situations. This is a terminal course, intended for those who will take no further work in this area.

The additional credit is earned through homework and additional reading. Even during the regular year this course only meets three times a week.

MODERN FOREIGN LANGUAGES AND LITERATURE

High school students who have been admitted to a college for the coming academic year may take any language as undergraduate students.

An option is provided in French and German as follows: the Basic Course sequence, 101 and 102, gives a thorough grounding in the language—listening, speaking, reading, and writing. It is conducted in small groups with native

speakers as instructors. The elementary reading course sequence, 131, 132, 133, and 134, concentrates on the comprehension of written texts.

For the basic course, all students who have had no previous preparation in the language they elect, should register for course 101. Students who have taken previous course work in the language they elect will be placed in course on the basis of College Entrance Examination Achievement scores which they must make available before registration.

Non-Cornell students who cannot submit CEEB scores must supply transcripts showing amount of language work done and report to the Division of Modern Languages for proper placement at the time of registration.

Of the courses listed below, those dealing with languages and linguistics are offered by the Division of Modern Languages, and those dealing with literature are offered by the Department of Romance Studies.

For languages other than the following, see listings under Quechua and Portuguese, p. 31; Classics, p. 36; and under Special Programs of the Summer Session, pp. 76-77.

English as a Second Language

June 25-August 8

Intensive courses in English for speakers of other languages will be given as part of the six-week Summer Session. Modern methods of teaching language will be used to provide greater fluency and comprehension of both oral and written English.

These courses are designed with particular attention to the requirements of non-native English speakers who plan to attend institutions of higher learning and whose lack of fluency may hinder them. *No beginning students will be accepted.* Students whose TOEFL test scores fall between 300 and 450 will be admitted to English 102. Those whose scores are above 450 will be admitted to English 211 and 212.

A diagnostic test will be administered to all students admitted to the courses during the first week of classes (June 26-July 3). Students will attend classes four hours a day, and language laboratory facilities will be available.

Engl. 102. ENGLISH AS A SECOND LANGUAGE (U,G) *June 25-August 8*
Six hours credit. Prerequisite, placement by the instructor. Twenty hours of instruction per week. Morrill Hall. Mr. Elliott and staff.

Engl. 211u. ENGLISH AS A SECOND LANGUAGE (U,G) *June 25-July 18*
Three hours credit. Prerequisite, placement by the instructor. Twenty hours of instruction per week. Morrill Hall. Mr. Elliott and staff.

Engl. 212u. ENGLISH AS A SECOND LANGUAGE (U,G) *July 21-August 8*
Three hours credit. Prerequisite, Engl. 211u. This is a continuation of English 211u. Twenty hours of instruction per week. Morrill Hall. Mr. Elliott and staff.

French

Fr. 101. FRENCH (BASIC COURSE) (U)

Six hours credit. Students who have previously studied any French must take the qualifying examination before registering for this course. Twenty hours of instruction each week. Mr. Noblitt and staff.

Fr. 102. FRENCH (BASIC COURSE) (U)

Six hours credit. Students who have not completed French 101 must take the qualifying examination before registering for this course. Twenty hours of instruction each week. Mr. Noblitt and staff.

Fr. 131u. FRENCH ELEMENTARY READING COURSE (U,G) *June 25–July 18*

Three hours credit. Twenty hours of instruction each week. Mr. Noblitt and staff.

Designed to help students to acquire a reading knowledge of the language.

Fr. 132u. FRENCH ELEMENTARY READING COURSE (U,G) *July 21 through August 8*

Three hours credit. Prerequisite, 131u or its equivalent. Twenty hours of instruction each week. Mr. Noblitt and staff.

Designed to help students to acquire a reading knowledge of the language.

Fr. 133u. FRENCH ELEMENTARY READING COURSE (U,G) *June 25 through July 18*

Three hours credit. Prerequisite, 132u or its equivalent. Twenty hours of instruction each week. Mr. Noblitt and staff.

Continuation of the work of 132u.

Fr. 134u. FRENCH ELEMENTARY READING COURSE (U,G) *July 21 through August 8*

Three hours credit. Prerequisite, 133u or its equivalent. Twenty hours of instruction each week. Mr. Noblitt and staff.

Continuation of the work of 133u.

Fr. 201. INTRODUCTION TO FRENCH LITERATURE (U)

Three hours credit. Prerequisite, French achievement score of 630 or better, or consent of the instructor. M T W Th F 9:30–10:45. Goldwin Smith 281. Mrs. Parrish.

The object is to acquire a reading facility in French, while developing a critical appreciation of the literature. Some eight major poets will be read, the works selected representing significant writings from the Middle Ages to present. Depending on the level of oral proficiency, the class will be conducted in part or entirely in French.

Fr. 203. FRENCH INTERMEDIATE COURSE (CONVERSATION) (U,G)

Three hours credit. Prerequisite, Qualification in French or placement by the Division of Modern Languages on CEEB score. Daily at 9:30–10:45 and 12:30–1:45 (two periods of seventy-five minutes each). Mr. Noblitt and staff.

Guided conversation, grammar drill, oral and written composition. Emphasis is placed upon increasing the student's oral command of French.

Fr. 353. THE NOVEL FROM 1857 to 1900 (U,G)

Three hours credit. Prerequisite, two semesters of a college course in French literature. M T W Th F 11–12:15. Goldwin Smith 281. Mrs. Parrish.

The dominant literary doctrines of the period—realism and naturalism—and their expression. Extensive reading of the novelists of the period: Flaubert, Zola, Maupassant, Fromentin, Huysmans, etc. Classroom discussions, written reports.

Fr. 629. INTRODUCTION TO LITERARY STUDIES (G)

Four hours credit. Required of all first-year graduate students in Romance Studies. Hours to be arranged. Mr. Grossvogel.

An introduction to methods of literary studies; the history of the field, the basic research tools, the various aspects of literary studies and schools of criticism, such as literary history, stylistics, structuralism, the relationship of literature to other fields such as the visual arts.

German

Germ. 101. GERMAN (BASIC COURSE) (U)

Six hours credit. Students who have previously studied any German must take the qualifying examination before registering for this course. Twenty hours of instruction each week. Mr. Kufner and staff.

Germ. 131u. GERMAN ELEMENTARY READING COURSE (U,G) *June 25 through July 18*

Three hours credit. Twenty hours of instruction each week. Mr. Kufner and staff.

Designed to help students to acquire a reading knowledge of the language.

Germ. 132u. GERMAN ELEMENTARY READING COURSE (U,G) *July 21 through August 8*

Three hours credit. Prerequisite, 131u or its equivalent. Twenty hours of instruction each week. Mr. Kufner and staff.

Designed to help students to acquire a reading knowledge of the language.

Germ. 201. INTRODUCTION TO GERMAN LITERATURE (U)

Three hours credit. Prerequisite, qualification in German.

The aim is to introduce the student to German literature through the reading of complete texts mainly from the nineteenth and twentieth centuries. The course is so designed that the student will increase his reading knowledge of German while developing a critical approach to literature. English will be used as much as necessary at the beginning; as the term progresses, classes will be conducted more and more in German.

Greek

See listing under Classics, p. 36.

Hindi

Hindi 600. SEMINAR IN HINDI LINGUISTICS (U,G)

Three hours credit. Prerequisite, consent of the instructor. Hours to be arranged.

Latin

See listing under Classics, p. 36.

Portuguese

See listing under Latin American Language and Area Program, pp. 76-77.

Quechua

See listing p. 31, and under Latin American Language and Area Program, pp. 76-77.

Russian

Russ. 101. RUSSIAN (BASIC COURSE) (U)

Six hours credit. Students who have previously studied any Russian must take the qualifying examination before registering for this course.

Twenty hours of instruction each week. Mr. Foos and staff.

Spanish

Span. 101. SPANISH (BASIC COURSE) (U)

Six hours credit. Students who have previously studied any Spanish must take the qualifying examination before registering for this course.

Twenty hours of instruction each week. Mr. Lozano and staff.

MUSIC

Music 101. THE ART OF MUSIC (U,G)

Three hours credit. M T W Th F 11-12:15. Lincoln B-22. Mr. Green.

An approach to the understanding and rational enjoyment of music. Offered especially for students who have had no technical training in the subject. Most of the outside work consists of listening to phonograph records.

Music 111. SAGE CHAPEL CHOIR (U)

One hour credit. Registration limited to members of the summer choir who are also registered for another course or courses in Summer Session. Rehearsals, Tuesday evenings 7:15-9 and Sunday mornings 9:30. Sage Chapel. Mr. Sokol.

Membership in the choir is not limited to persons who register for the course.

*Music 121. INDIVIDUAL INSTRUCTION IN ORGAN (U)

One hour credit, provided the student is also taking Music 101 for credit. May also be taken without credit. Mr. Paterson.

Fee for one-hour lesson weekly, \$50.00. Fees for an organ practice schedule: twelve hours weekly \$30.00; six hours weekly, \$15.00.

PHILOSOPHY

Phil. 101. INTRODUCTION TO PHILOSOPHY (U)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 231. Mr. Wood.

An introduction to philosophical ideas through an intensive study of the writings of several major philosophers. Emphasis will be placed on moral philosophy, though problems of metaphysics, theory of knowledge and philosophy of religion will also be included.

Phil. 325. ETHICAL THEORY (U,G)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 231. Mr. Wood.

An intensive study of the ethical theory of Kant. Kant's conceptions of practical reasoning, the moral life, and the foundations of moral obligation will be explored. No specific prerequisite, but students should have some acquaintance with philosophy.

PHYSICS

*Physics 105. TOPICS IN PRESENT-DAY PHYSICS (U)

Three hours credit. Prerequisites, three units of college-preparatory mathematics and a one-year course in either high school or college Physics, and consent of the instructor. M T W Th F 10-12. One weekly two-hour lecture (usually on Mondays), a two-hour seminar-discussion meeting on each of three days of the week, and one weekly two-hour meeting either for additional lectures or for viewing and discussing pertinent instructional movies. Except for the common Monday lectures and for the additional lectures or movies, students are subdivided into class-study groups according to interests and background preparation. Physics 105 is not equivalent to Physics 101, 121, 201, or 207 of the academic year. Lectures, Rockefeller B. Mr. Cotts.

Principal topics will probably be special relativity and quantum theory. Fee, \$5.00.

*Physics 207. FUNDAMENTALS OF PHYSICS (U)

Four hours credit. Prerequisites, one year of high school Physics and Math 111, or consent of the instructor. Mathematically apt students may take this course with simultaneous enrollment in Math 111. (No credit will be granted if the student has credit for Physics 101 or 121, or the equivalent.) See also Physics 208. Lectures, M, Rockefeller A, and T W Th F, Rockefeller 105, 11-12:15; seminars and laboratory, M T W Th F, Rockefeller 322-4, 1:30-4:30. Mr. Cassel.

Dynamics of particles, conservation laws, collisions, harmonic oscillations, and special theory of relativity. At the level of *Physics for Students of Science and Engineering*, Part I, 1966, by Halliday and Resnick (or of *Elementary Classical Physics*, Vol. I, 1965, by Weidner and Sells), and of *Elementary Modern Physics*, 1960, by Weidner and Sells. Fee, \$5.00.

*Physics 208. FUNDAMENTALS OF PHYSICS (U)

Four hours credit. Prerequisites, Physics 207 and at least simultaneous enrollment in Math 112, or consent of the instructor. (No credit will be granted if the student has credit for Physics 102 or 233, or the equivalent.) Note: Summer students may obtain permission to enroll simultaneously in Physics 207 and 208 by passing a special examination administered at Cornell on June 25, 1969; indeed those who pass high may be granted, without enrollment in the

course, four hours credit for Physics 207, and in rare cases, also four hours credit for Physics 208. Lectures, M, Rockefeller A, and T W Th F, Rockefeller 103, 8-9:15; seminars and laboratory, M T W Th F, Rockefeller 322-4, 1:30-4:30. Mr. Gross.

A continuation from Physics 207. Dynamics of fluids, acoustic waves, laws of thermodynamics, electromagnetic waves, polarization, diffraction, interference, the wave-particle properties of matter and an introduction to the ideas of quantum mechanics. At the level of *Physics for Students of Science and Engineering*, Part II, 1966, by Halliday and Resnick (or of *Elementary Classical Physics*, Vol. II, 1965, by Weidner and Sells), and of *Elementary Modern Physics*, 1960, by Weidner and Sells. Fee, \$5.00.

***Physics 360. INTRODUCTORY ELECTRONICS (U,G)**

Three hours credit. Prerequisites, Physics 208 or 234 (and preferably 310), or consent of the instructor. Lectures and laboratory, M T W Th F 2-5, Clark 309. Mr. Cotts.

Introduction to the principles of semi-conductor devices, of electronic components and circuits, and to the operating characteristics of power supplies, amplifiers, oscillators, switching and timing circuits, etc. Knowledge of methods and techniques invaluable to the student who plans experimental work in almost any field involving modern instruments. At the level of *Elementary Electronics*, 1966, by White. Fee, \$10.00.

***Physics 500. INFORMAL GRADUATE LABORATORY (G)**

One or two hours credit. Prerequisites, Physics 236, 310 or 360, and 436, and consent of the instructor. Laboratory, M T W Th F 2-5, Clark 308. Mr. Browman.

Topics as in Physics 510, listed in the eight-week session, p. 32. Fee \$5.00 per credit hour.

(See also Special Programs of the Summer Session, p. 64.)

PSYCHOLOGY

Psych. 101. INTRODUCTION TO PSYCHOLOGY: BASIC PROCESSES (U)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith D. Mr. Maas.

Emphasizes the study of human behavior from the standpoint of the basic processes, including the following: brain functioning, intelligence, perception, learning, motivation, emotion, personality, abnormal behavior, and psychiatry. The course centers upon contemporary problems confronting psychologists and is supported by special films and guest speakers.

(See also C.D.&F.R. 115, p. 49.)

Psych. 102. INTRODUCTION TO PSYCHOLOGY: PERSONALITY AND SOCIAL BEHAVIOR (U)

Three hours credit. M T W Th F 9:30-10:45. 310 Morrill. Mr. S. Jones.

An examination of personality and social influences on the individual's adjustment to himself and his environment. Both classic and contemporary viewpoints will be considered and evaluated in the light of empirical evidence.

Psych. 306. LEARNING (U,G)

Three hours credit. M T W Th F 11-12:15. Morrill 340. Mr. Rosinski.

The fundamental conditions and principles of learning, both animal and

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human. The basic phenomena of operant conditioning, human verbal and motor learning, discrimination learning, and serial learning will be studied experimentally. Traditional and contemporary theories of learning will be reviewed, and selected experimental literature will be discussed with special emphasis upon recent developments in the field.

Psych. 325. ABNORMAL PSYCHOLOGY (U,G)

Three hours credit. Prerequisite, an introductory course in psychology. M T W Th F 11-12:15. Morrill 310. Mr. Toleno.

An introduction to the study of psychopathology with emphasis on causes. The individual is considered as a unique biological and psychological entity trying to achieve adequate functioning in a particular social milieu. Possibilities of facilitating this process and appropriate types of intervention, as well as research problems in this area, will be considered.

Psych. 381. SOCIAL PSYCHOLOGY (U,G)

Four hours credit. Prerequisites, three hours of psychology and three hours of sociology. M T W Th F 9:30-10:45. Morrill 340. Mrs. Regan.

Analysis of the history, concepts, methods, and theories used to describe and conceptualize the ways in which people react to one another in social settings and in the laboratory. The topics for investigation in lectures and readings will include attitude change, communication, interpersonal influence, impression formation, leadership, and interpersonal attraction. (Also listed as Soc. 381.)

Psych. 583. PROSEMINAR IN SOCIAL PSYCHOLOGY (G)

Four hours credit. Prerequisites, graduate student status and consent of the instructor. T Th 1:30-4. McGraw B-20. Mr. Meltzer.

Critical analysis of the major current theories and research in social psychology. Sociological perspectives will be emphasized. (Also listed as Soc. 583.)

RURAL SOCIOLOGY

R. Soc. 550. INFORMAL STUDY IN RURAL SOCIOLOGY (G)

Credit to be arranged. Prerequisites, graduate standing and permission of the department staff member concerned. Members of the staff.

R. Soc. 551. RESEARCH IN RURAL SOCIOLOGY (G)

Credit to be arranged. Prerequisites, graduate standing and permission of the staff member concerned. Members of the staff.

SOCIOLOGY

Soc. 101. MAN AND SOCIETY (U)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith 128. Mr. Ackerman.

An introduction to the principal questions and perspectives of sociology. The focus will be upon the history and findings of the analysis of the processes which maintain the continuity and stability of society and which contribute to its change.

Soc. 248. POLITICS IN SOCIETY (U,G)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 128.

An examination of political institutions and theories as sociological phenomena. Cultural and social factors associated with political structure, political attitudes, and political behavior. Political decision-making and theorizing as sociological processes.

Soc. 381. SOCIAL PSYCHOLOGY (U,G)

Four hours credit. Prerequisites, three hours of psychology and three hours of sociology. M T W Th F 9:30-10:45. 340 Morrill. Mrs. Regan.

Analysis of the history, concepts, methods, and theories used to describe and conceptualize the ways in which people react to one another in social settings and in the laboratory. The topics for investigation in lectures and reading will include socialization, attitude change, communication, interpersonal influence, impression formation, leadership, and interpersonal attraction.

(Also listed as Psych. 381.)

Soc. 541. SOCIAL ORGANIZATION AND CHANGE (G)

Four hours credit. Prerequisites, graduate student status and consent of instructor. M W 1:30-4. McGraw B-20. Mr. Williams.

An analysis of major problems in theory and research in the general field of social organization and change. The subject will be studied from the standpoint of the nature and size of the social system (small groups, communities, large-scale organizations, societies) and also in terms of the social processes and properties of the system, such as integration, authority, conformity, and deviance.

Soc. 583. PROSEMINAR IN SOCIAL PSYCHOLOGY (G)

Four hours credit. Prerequisites, graduate student status and consent of instructor. T Th 1:30-4. McGraw B-20. Mr. Meltzer.

Critical analysis of the major current theories and research in social psychology. Sociological perspectives will be emphasized.

(Also listed as Psych. 583.)

THEATRE ARTS

The summer program of the Department of Theatre Arts is organized to offer a variety of perspectives on the contemporary theatre. The course offerings, as well as the production work on the summer season of plays, and the final production of these plays in repertory, have been designed as an integrated experience of the contemporary theatre.

Th. Arts 300. DIRECTED STUDIES (U,G)

Credit and hours to be arranged.

Th. Arts 343. THE THEATRE OF IDEAS AND THE THEATRE OF CRUELTY. (U,G)

Four hours credit. M T W Th F 11-12:15. Lincoln 301. Mr. S. Cole.

A study of the relationship between ideological commitment and production style and technique in the contemporary theatre. Plays and critical works by Artaud, Brecht, Weiss, Genet, Pinter, Witkiewicz, and others will be read, and the production techniques of Brecht, Brook, Grotowski, and Beck will be studied.

Th. Arts 344. PRODUCTION APPROACHES IN CONTEMPORARY THEATRE. (U,G)

Four hours credit. M T W Th F 10-11 a.m. Laboratory session to be arranged in afternoon and evening. Lincoln 201 plus work in Willard Straight Theatre. Staff and/or visiting lecturer/artist.

This course is designed to provide both study and practice in the contemporary theatre. The contemporary plays produced by the Cornell Summer Repertory Theatre will be examined from the point of view of the director, the designer, and the actor. Members of the class will work with the Cornell Summer Repertory Theatre in various production capacities (acting, assistant directing, stage management, design, and construction). The course will be in lecture and laboratory sessions and will be taught by the actors, directors, and designers of the Cornell Summer Repertory Theatre under the supervision of a Theatre Arts staff member.

Th. Arts 377. FUNDAMENTALS OF MOTION PICTURE PRODUCTION (U,G)

Four hours credit. M T W Th F 1-4. Lincoln 204. Mr. Beck.

Principles and methods of motion picture production with primary emphasis on creative techniques: script writing, photography, production, editing, special effects, and sound recording. Students will prepare individual films using departmental equipment and laboratories.

Th. Arts 388. PLAYWRITING (U,G)

Four hours credit. M Th 1:25-4:25. Lincoln 302. Mr. States.

A laboratory for the reading and criticism of student plays; occasionally periods will be devoted to the analysis of classics of the drama. Students may write in any length and form they desire. No experience in playwriting is necessary, but it is assumed that the student has some interest and background in drama and in creative writing.

TYPEWRITING

See Hotel Administration, p. 51.

SPECIAL PROGRAMS OF THE SUMMER SESSION

The following Special Programs are offered during the Summer Session period. Some programs occur during periods other than the regular eight- or six-week session. Note the dates scheduled for each program. Additional Special Programs may be added before the session begins. Inquiries are invited.

In most cases, the Special Programs are set up to serve a specific clientele and vary from the regular Summer Session procedures in one or more features such as tuition rates, length of period, application procedures, registration process, etc. The variations are noted in the description of each program.

In certain programs it is possible for a student registered in the eight- or six-week Summer Session to elect a course from a Special Program as part of his schedule. Likewise, depending on the date the Special Program begins, it may be possible for a student admitted to a Special Program to add an eight- or six-week session course to complete his studies in the summer. In all cases of this nature, the Summer Session tuition rate will apply for the elected course rather than the rate specified for the Special Program. Registration in a course in a Special Program must be approved by the Program director.

Applicants for admission to a Special Program do not use the application form provided in the back of this *Announcement*. Instructions for requesting further information and application forms accompany the descriptions of the following Special Programs.

ADVANCED PLACEMENT PROGRAM FOR SECONDARY SCHOOL JUNIORS

JUNE 25–AUGUST 8

The Advanced Placement Program for Secondary School Juniors, open only to academically talented students who have completed the eleventh year in high school in June 1969, is offered to enable college-bound students to achieve advanced placement in college.

The program offers college-level courses in each of twelve options: anthropology, biology, chemistry, contemporary American politics and economics, geological sciences, French, German, Russian, Spanish, mathematics, physics and psychological studies. In each option the student may earn a minimum of six credit hours to be recorded with the Registrar of Cornell University for subsequent transfer as desired. Each option requires full time study for the six-week session.

Special provisions are made for housing, dining, and counseling services. The usual health services and all extracurricular activities provided in the Summer Session are made available. The total charge to each student is \$500 for all expenses except textbooks and personal expenses.

For further information and application forms, address: Director, Advanced Placement Program, Secondary School Juniors, 301 Stone Hall, Cornell University, Ithaca, New York 14850. Request for application forms is to be made by February 15, 1969.

ADVENTURES IN PHYSICS FOR HIGH-ABILITY SECONDARY-SCHOOL STUDENTS

Supported by the National Science Foundation

JUNE 25–AUGUST 8

This program is designed for high school students who will have completed eleventh grade. It provides a superior opportunity in physics, both classroom and laboratory, to supplement the usual offerings in the secondary school. The program is designed:

- (1) to impart to the student some of the exciting adventure of physical science in our present-day culture,
- (2) to facilitate self-evaluation of the student's personal interests in science, and
- (3) to provide a meaningful first exposure to the academic atmosphere of college.

This program will not duplicate or take the place of any conventional college course, but it will supplement the high-school physics experience by a treatment in depth of some fundamental physical concepts and theories, and by independent experimental work in a well equipped laboratory.

For application forms and/or further information, write to Professor R. M. Cotts, Director, Adventures in Physics, Clark Hall, Cornell University, Ithaca, New York 14850.

AGRICULTURAL EDUCATION SUMMER PROGRAM

JULY 7–AUGUST 1

Three-week unit courses in technical agriculture and education are available to teachers of agriculture and other professional workers in agricultural education. The three-week courses provide an opportunity for professional improvement without the need for extended leaves of absence from positions.

A one-week Institute in Natural Resources is also available to teachers of agriculture and other professional workers. (See listing at end of this report.)

Graduate credit earned in three-week unit courses may be applied toward the residence requirement for only the professional degree in education at Cornell. Students desiring to become candidates for this degree should also register in the Graduate School (see pp. 14–16). The courses may also be applied toward meeting certification requirements.

Final registration for the three-week session will take place July 7, 1969, at a time and place to be announced.

For further information, address Dr. J. P. Bail, Director, Agricultural Education Summer Program, 209 Stone Hall, Cornell University, Ithaca, New York 14850.

A complete outline of the course offerings follows:

JULY 7–25

Agr. Econ. 404u. ADVANCED FARM MANAGEMENT (U,G)

Two hours credit. Lectures, M T W Th F 8–9:50. Laboratory W 2–4:30. Warren Hall 201. Mr. Cunningham.

An advanced course dealing with the application of farm management principles to present-day, commercial farm management data. Analysis of individual farm records will be made in laboratory sessions. Plans for possible field trips to be arranged.

*Agr. Eng. 449u. SMALL GASOLINE ENGINE MAINTENANCE AND REPAIR (U,G)

Two hours credit. M T W Th F 10-11:50 and M T Th 1-4. Riley-Robb 60 and 64. Mr. Lechner.

The course includes instructions and laboratory practice in preventive maintenance and overhaul of small gasoline engines. Each student will be expected to bring to class one or two engines that need overhaul, and to purchase the parts needed. The class is designed primarily for vo-ag teacher needs but any interested student may enroll. Fee \$3.00.

Ed. 533u. PLANNING COURSES OF STUDY AND AGRICULTURAL EXPERIENCE PROGRAMS (U,G)

Two hours credit. M T W Th F 8-9:50. Warren 232. Mr. Drake.

Guiding principles, objectives, and sources of information will be developed for planning the courses of study and the teaching calendar. Consideration will be given to principles, meaning, and function of agricultural experience programs, and how they are planned and used as a means of instruction.

Ed. 630u. SEMINAR IN AGRICULTURAL EDUCATION (G)

Two hours credit. M T W Th F 10-11:50. Warren 232. Mr. Tom.

The seminar will be centered on current problems affecting the teaching of agriculture in the secondary school. Consideration will be given to such areas as curricula, the role of agriculture in area schools, cooperative arrangements for providing agricultural instruction, policies at the local, state, and national level affecting agricultural education, and other problems as identified by the students and instructor.

Ed. 499u. INFORMAL STUDY IN EDUCATION (U,G)

Credit and hours as arranged. Consent of instructor required. Staff.

Ed. 500u. SPECIAL STUDIES IN EDUCATION (G)

Credit and hours as arranged. Consent of instructor required. Staff.

Students working on theses or other research projects may register for this course.

*Flori. 361u. NURSERY AND TURFGRASS MANAGEMENT (U,G)

Four hours credit. Prerequisite, consent of instructor. Lectures and laboratory, M T W Th F 8-12 and 1-4. Plant Science 37 and nursery and turfgrass plots. Messrs. Good, Cornman, Tukey, Gortzig, Goodrich, Sinclair, Johnson, Bing, Pidduck and Kumpf.

Commercial production of nursery crops and turfgrass management is stressed. Nursery topics include propagation, soil management, handling of field- and container-grown nursery stock, business management, and insect, disease, and weed control. Turfgrass topics include varietal identification and selection, fundamentals of fertilization, and the identification and control of weeds, insects, and diseases. Fee, \$10.00.

Natural Resources Institute

JULY 28–AUGUST 1

Three concurrent courses in Natural Resources Management offered for one credit hour each. Students may enroll for only one course.

Institute convenes daily, July 28–August 1, 8:30–4:30, with three evening sessions to be scheduled. All instruction is presented at the Cornell Arnot Conservation Education Center. Meals and lodging are available at this location. Total enrollment limited to sixty students; preference given to teachers of agriculture but others will be admitted to the capacity of the Center. Messrs. Brumsted, Caslick, Dickson and Winch.

Inquiries for further information should be addressed to: Professor Joe P. Bail, Department of Education, Stone Hall, Cornell University, Ithaca, New York 14850.

Consv. 303u. INTRODUCTION TO NATURAL RESOURCES MANAGEMENT (U,G)

One hour credit. No prerequisite.

Principles of wood-lot forestry and wildlife management as they relate to land use in New York State.

Consv. 403u. APPLIED SILVICULTURE (U,G)

One hour credit. Prerequisite, 303u or permission of the instructor.

Preparation and execution of a sound management plan for a tract of northern hardwood forest. Treatment of selected economic timber will be emphasized.

Consv. 503u. PRINCIPLES OF WILDLIFE MANAGEMENT (U,G)

One hour credit. Prerequisite, 411u or permission of instructor.

Fundamental mechanisms of wildlife populations, with emphasis on management of fish and wildlife in freshwater ponds and marshes.

ARCHITECTURE SUMMER TERM

MID-JUNE to MID-AUGUST

A summer term will be offered in the field of Architecture if there is student demand for it and adequate faculty available. The term is usually of ten weeks' duration, starting in mid-June and ending in mid-August. It will be offered at both graduate and undergraduate levels and carries credit for successful work.

At the undergraduate level, the time is devoted exclusively to one subject, Architectural Design credited as Elective Design 119. Ten hours of credit will be given for successful completion of the work by petition of the student and it may be considered one term of design as required in the curriculum. The number of hours of credit in excess of those required for the sequence of study may be allocated to elective credit hours.

Registration will be limited to students of satisfactory standing who have completed the sophomore year of study. However, students of better-than-average ability and performance may petition the faculty for Summer Session enrollment after completion of Freshman Design. Two summer terms in consecutive years will not be permitted without the approval of the faculty.

Students from schools of architecture other than Cornell are invited to apply to the College for admission to the program.

At the graduate level, the summer term is devoted to problems forming part of the student's program of work. The term may carry residence credit equal to that of a normal academic term. Participation in the program cannot be undertaken without the consent of the student's adviser.

For further information write to: Director, Architecture Summer Term, East Sibley Hall, Cornell University, Ithaca, New York 14850.

AREA STUDY PROGRAMS FOR SECONDARY SCHOOL TEACHERS OF HISTORY AND THE SOCIAL SCIENCES

JUNE 25–AUGUST 8

Combinations of courses in the social sciences have been arranged, with the cooperation of the New York State Education Department, dealing with China, South Asia, and Southeast Asia. In each case, the purpose is to enable teachers to broaden their understanding of regions which are receiving increasing emphasis in secondary school curricula. The instructors are knowledgeable in their fields and experienced in dealing with the materials from the standpoint of their relevance to secondary school work.

Each area will require full-time study for the six-week period and provides six hours of graduate level credit. The courses are approved for New York State summer training grants to defray costs of tuition, fees, and living expenses for a limited number of teachers of social studies in grades six through twelve within the state.

For further information and application forms, address; Director, Area Study Programs, B-20 Ives Hall, Cornell University, Ithaca, New York 14850. The courses in each program are:

China Program

Hist. 324. HISTORY OF CHINA DURING THE NINETEENTH AND TWENTIETH CENTURIES

and

Hist. 490. SEMINAR: MODERN CHINESE HISTORY

See pp. 44, 48.

South Asia Program

Anthro. 441. CULTURE AND SOCIETY OF SOUTH ASIA

and

Anthro. 545. SEMINAR: SOUTH ASIA

See p. 33.

Southeast Asia Program

Gov. 344. GOVERNMENT AND POLITICS OF SOUTHEAST ASIA

and

Gov. 644. SEMINAR: SOUTHEAST ASIA

See pp. 43–44.

CITY AND REGIONAL PLANNING AND COMMUNITY DEVELOPMENT INSTITUTE

JUNE 15-JUNE 20

This seventh annual Institute, offered by the Department of City and Regional Planning, is intended to serve the needs of professionals in city and regional planning and related fields such as urban renewal, community and regional development, and institutional planning.

The noncredit courses described below will be offered concurrently.

Tuition and fees for each course: \$175. That sum includes housing in University facilities. A limited number of scholarships will be offered.

For further information and application forms, address: Director of Summer Institute, Department of City and Regional Planning, 106 West Sibley Hall, Cornell University, Ithaca, New York 14850.

1. COLLEGE AND UNIVERSITY PLANNING AND INSTITUTIONAL RESEARCH

Professors Kermit C. Parsons, Thomas W. Mackesey, Thomas R. Mason, and guest lecturers.

Designed to provide an intensive week of study in college and university campus planning that will permit an interchange of approaches between the participants as well as instruction in the methods and techniques of research, analysis, plan preparation, and implementation.

Topics include: statewide planning for higher education, community planning and campus planning, urban renewal and campus development, organization for university planning, institutional research, utilization studies, scheduling and simulation, plan development/facilities programming, the capital budget, and case studies.

2. DATA PROCESSING AND GOVERNMENT INFORMATION SYSTEMS IN PLANNING

Professor Sidney Saltzman and guest lecturers.

A basic introduction to the field designed to provide an opportunity for practitioners to become familiar with data processing applications, equipment and procedures. No prior knowledge or experience is necessary. Design and implementation of application to planning, equipment use, data reduction and analysis, programming case studies.

3. HISTORIC PRESERVATION PROGRAMS

Professors Stephen W. Jacobs, Barclay G. Jones, and guest lecturers.

An introduction to preservation planning for private citizens, urban planners, and other professionals; an introduction not only to the means of safeguarding our heritage, but also to the opportunity to use values of a previous time as a resource for planning for the future. In addition to discussions of case studies and the underlying social-psychological basis for preservation, there will be lectures on survey techniques, visual programming, scenic and historic legal controls, private involvement, and the potential of federal and state programs on preservation planning.

4. INTRODUCTION TO SOCIAL PLANNING

Mrs. Janet Reiner.

Planning social services such as health, education and welfare requires: (1) substantive knowledge of policy, planning, and programming in these fields; (2) development of approaches to delineate subgroups in community

and to understand reactions which various populations (particularly the least educated, least urbanized and poorest individuals and groups) have to alternative program packages.

Development of such a social planning approach to planning social services begins with examination of the styles of life of specialized sectors of the population. The outcome is a set of incremental programs which fit means to ends and test their fit continually in terms of impact on persons.

5. *PPBS AND OPERATIONS RESEARCH FOR PLANNERS

Professors John M. Alderige, Courtney Riordan and Guest Lecturers.

An introductory course intended to provide a general knowledge and understanding of the normative systems approach toward governmental decision-making. PPBS and operations research techniques will be examined in terms of their assumptions about reality, their logical structure, and their potential effectiveness in improving the identification and attainment of planning objectives of state and local governments. No prior knowledge or experience in either PPBS or operations research is necessary.

CITY AND REGIONAL PLANNING SUMMER INTERNSHIP PROGRAM

JUNE 30–AUGUST 23

A Summer Internship in the New York metropolitan area in public planning, development, and renewal agencies or in planning consultant's offices, combined with lectures and discussions two evenings a week and field trips in the New York area and to other east coast cities. Tuition is \$210 for three hours of credit. Several Richard King Mellon Scholarships are available.

Offered primarily for M.R.P. candidates in the Department of City and Regional Planning but open to others by permission of the Department. For further information address Professor Kermit C. Parsons, Department of City and Regional Planning, Sibley Hall, Cornell University, Ithaca, New York 14850.

CORNELL CONSERVATION WORKSHOP

JULY 21–25, AUGUST 4–8

Two weeks of five-day sessions including lectures, demonstrations, and field trips on the facts, methods, and materials for teaching conservation. Open to teachers, administrators, youth leaders, and others interested in the wise use of natural resources. No academic credit is available, but a certificate is issued to recommend in-service training credit to the participants in the Workshop. A person may attend either session.

Participants are housed in cabins in the Arnot Forest, Cornell's 4000-acre conservation training center, eighteen miles from the campus. Scholarships are available for qualified persons.

For further information and application forms, write: Wayne T. Bell, Jr., Fernow Hall, Cornell University, Ithaca, New York 14850.

* Planning, Programming, Budgeting Systems.

CORNELL SUMMER WORK-SCHOLARSHIP PROGRAM

JUNE 16–AUGUST 15

Intended primarily for Black students, this Program is designed to provide meaningful opportunities to research discriminatory hiring and firing practices and develop new employment programs for companies in Central New York State. Students are trained at Cornell in research methods, corporate structure, union practices, etc. They then enter the personnel offices and related departments of corporations in Binghamton, Buffalo, Elmira, Ithaca, Rochester, and Syracuse, and plan to spend approximately seven weeks learning about the business world and its response to employment, race, and other social problems. Students receive a weekly scholarship and are asked to submit frequent reports on their activities, as well as a report to their host companies containing recommendations for change.

For information, contact the Office of the President, Day Hall, Cornell University, Ithaca, New York 14850.

ENGINEERING COOPERATIVE PROGRAM

JUNE 9–SEPTEMBER 13

ADMISSION. Selected courses of the regular curricula in the College of Engineering are offered in the summer to accommodate the schedule of Cornell students in the Cooperative Program. Within the enrollment capacity of each course, other students may be admitted provided they present satisfactory evidence of being prepared and a letter of authorization from the college or university in which they are enrolled. A schedule of courses to be offered will be available after March 1, 1969.

CALENDAR. Courses are scheduled in two separate but consecutive seven-week periods: first period, June 9–July 26; second period, July 28–September 13.

TUITION AND FEES. Because the Cooperative Program's Summer Term is essentially a curriculum term in the College of Engineering, tuition and fees are not those of the six-week Summer School but are based upon the regular tuition and fees for a semester in the academic year.

REGULATIONS AND SERVICES. In general the regulations described for the Summer School apply also to the Engineering Cooperative Summer Term. Health services and library facilities are available during the Engineering Cooperative Summer Term.

DOUBLE REGISTRATION. Insofar as they can be scheduled, courses of the regular Summer Session may be arranged for students admitted to the Engineering Cooperative Summer Term.

For applications, address: Director of the Engineering Cooperative Program, Upson Hall, Cornell University, Ithaca, New York 14850.

ENGINEERING SHORT COURSES

Coordinated by the Office of Continuing Education, College of Engineering

Noncredit courses for practicing engineers and scientists who wish to extend or update their knowledge of various technical subjects. Lectures, computation sessions, and laboratory periods. For information and application forms, address: Director of Continuing Education, 251 Carpenter Hall, Cornell University, Ithaca, New York 14850.

1. STRUCTURE OF PROGRAMMING LANGUAGES

Professor Peter Wegner. Fee: \$200. One week: *June 10-14.*

2. AUTOMATIC TEXT AND PICTURE PROCESSING

Professors G. Salton and Alan C. Shaw. Fee: \$200. One week: *June 23-27.*

3. STATISTICAL SELECTION AND RANKING PROCEDURES;
OPTIMAL SEQUENTIAL SAMPLING PLANS

Professors Robert Bechhofer, Jack Kiefer, and Lionel Weiss. Fee: \$200 (\$175 if taken in conjunction with course number 5). One week: *June 16-20.*

4. TOPICS IN MATHEMATICAL PROGRAMMING AND
OPTIMIZATION

Professors K. O. Kortanek (Cornell) and C. E. Lemke (Rensselaer Polytechnic Institute). Fee: \$150 (\$125 if taken in conjunction with course number 5). Three days: *June 18-20.*

5. APPLICATIONS OF PROBABILITY AND STOCHASTIC PROCESSES

Professors Mark Brown, Hamilton Emmons, Marcel Neuts, and Narahari Prabhu. Fee: \$200 (\$175 if taken in conjunction with course number 3 or 4). One week: *June 23-27.*

6. HIGH-VOLTAGE PULSE-POWER ENGINEERING

Professors S. Linke and J. Ballantyne, and guest speakers. Fee: \$200. One week: *June 16-20.*

7. THERMAL POLLUTION AND WASTE HEAT DISPOSAL FROM
POWER PLANTS

Professors F. K. Moore and K. B. Cady, and guest speakers. Fee: \$200. One week: *June 16-20.*

8. NUCLEAR REACTOR OPERATIONS

Mr. H. C. Aderhold and Professors K. B. Cady and R. McPherson. Fee: \$450. Three weeks: *July 7-25.*

9. PRESTRESSED CONCRETE PRESSURE VESSELS

Professors Richard N. White and Peter Gergely. Fee: \$200. One week: *June 16-20.*

10. FINITE ELEMENT ANALYSIS

Professor R. H. Gallagher (Cornell), Dr. W. Lansing (Grumman Aircraft Corp.), Dr. R. H. Mallett (Bell Aerosystems Co.), Dr. R. J. Melosh (Philco

72 ENGINEERING CONCEPTS

Ford Corp.), and Professor T. H. H. Pian (M.I.T.). Fee: \$350. Two weeks: *June 16-27.*

11. OPTIMUM STRUCTURAL DESIGN

Professor R. H. Gallagher (Cornell), Dr. R. A. Gellatly (Bell Aerosystems Co.), Professors L. A. Schmit (Case Western Reserve University). Fee: \$200. One week: *July 21-25.*

12. STRUCTURAL MODELS

Professor Richard N. White. Fee: \$225. One week: *July 21-25.*

13. LAND USE AND NATURAL RESOURCE INVENTORIES FOR PLANNING PURPOSES

Professor Donald J. Belcher. Fee: \$300. One week: *June 23-30.*

14. CAUSES, ANALYSIS, AND CONTROL OF LANDSLIDES

Professor D. J. Henkel. Fee: \$225. One week: *June 23-27.*

15. PRINCIPLES OF POLYMER SYSTEMS

Professor Ferdinand Rodriguez. Fee: \$350. Two weeks: *June 16-27.*

16. ELECTRON AND LIGHT MICROSCOPY

Professor George G. Cocks (Cornell), Mr. Sydney Breese, Jr. (U.S. Dept. of Agriculture), and guest lecturers. Fee: \$400. Two weeks: *July 14-25.*

17. TECHNICAL COMMUNICATIONS

Messrs. M. D. Morris (P. E.), R. H. Dodds (Gibbs and Hill), and K. G. Tong (John Wiley and Sons, Inc.). Fee: \$200. One week: *June 16-20.*

18. MANAGING TECHNICAL PERSONNEL

Professor C. P. Alderfer (Yale) and guest speakers. Partially financed by the New York State Technical Services Program and designed primarily for industries in the Southern Tier area of New York State. Fee: \$150. One week: *July 21-25.*

MODERN ENGINEERING CONCEPTS FOR TECHNICAL MANAGERS

June 23-July 18

Designed for managers of technical personnel at an intermediate level in diversified industries who have at least a bachelor's degree in engineering or applied science and preferably from ten to twenty years of industrial experience.

This new noncredit program acquaints technical managers with recent developments in mathematics, physics, materials science, computer science, operations research, and other subjects. It will provide them with an overview of these subject areas and with a working vocabulary in them. It will identify areas of major potential for engineering applications, to enable participants to make better use of the skills and knowledge of recent graduates and other technical personnel under their direction.

Fifty-three sessions of two hours each will begin June 23 and end July 18, 1969. There will be a midsession break between Thursday noon, July 3, and

Tuesday morning, July 8. Late afternoons and evenings will be open for recreational or special events.

The total fee of \$1,600 includes instruction, texts, supplies, housing, and meals. Enrollment is limited to twenty-five. For further information address: Director of Continuing Education, 251 Carpenter Hall, Cornell University, Ithaca, New York 14850.

EXECUTIVE DEVELOPMENT PROGRAM

JUNE 23–AUGUST 1

This Program is designed to contribute to the continuing education of executives for management. The Program offers an intensive six-week seminar, in which participants are brought together with professors and business and government leaders to explore the task of management in the face of accelerating technological, social, economic, and political changes and the demands that such changes make on management.

Seminars, lectures, and group discussions are used to engage each participant in a broad study of the role of management. The objective is to increase his awareness of the broader aspects of management that must be considered for effective and responsible executive leadership. The Program is designed accordingly, to promote an understanding of the expanding consequences of executive decisions and the broad issues that influence company policy. More particularly, it is designed to lead the participant to take a company-wide viewpoint; to apply financial and economic standards in the formulation and appraisal of company policies; to increase his knowledge about factors that contribute to more effective organization and more enlightened ways of enlisting human effort; and to heighten his awareness of environmental factors that influence the development of the firm and impose new responsibilities on the exercise of its authority.

For further information, write: Professor Frank F. Gilmore, Director, Executive Development Program, 519 Malott Hall, Cornell University, Ithaca, New York 14850.

UNIT COURSES IN GUIDANCE

Offered by the Department of Education

JUNE 30–JULY 18

The three courses described below are made available to counselors on a three-week basis in order to provide an opportunity for professional improvement without the need for extended leaves of absence from employment. Credit earned may be applied toward meeting requirements for permanent certification for school guidance positions. For further information, address: Dr. A. Gordon Nelson, 215 Stone Hall, Cornell University, Ithaca, New York 14850.

I. & L.R. 451u. DYNAMICS OF OCCUPATIONAL STRUCTURES IN WORK ORGANIZATIONS (G)

Three hours credit. M T W Th F 9–1:30. Field trips to be arranged. Ives 218. Mr. Mesics.

Information about work in modern organizations, the character and distribution of the work force, the role of unions, automation and technology, and the changing character of occupations. The focus is on these areas as they apply to the guidance of noncollege-bound youth. This course may be taken to satisfy in part the requirements for permanent certification in guidance in New York State.

Ed. 586u. ORGANIZATION AND ADMINISTRATION OF GUIDANCE PROGRAMS (G)

Two hours credit. M T W Th F 8-9:50. East Roberts 223. Mr. Bresee.

Principles and practices in planning and conducting a guidance program and other pupil personnel services. This is one of the courses required for permanent certification in guidance in New York State.

Ed. 587u. PRACTICUM IN MEASUREMENT AND APPRAISAL FOR COUNSELORS (G)

Two hours credit. M T W Th F 10-11:50. East Roberts 223. Mr. Andrus.

An advanced course in the use of tests and test results in the psychological appraisal of individuals. Emphasis will be placed on analysis of testing programs, intensive examination of selected standardized tests, and laboratory experience in interpreting test results. Designed to meet a New York State permanent certification requirement for guidance counselors.

HOME ECONOMICS EDUCATION UNIT COURSES

JUNE 30-AUGUST 8

Five unit courses and workshops are offered for home economics teachers, extension home economists, and others who view education as a process of bringing about change in the everyday behavior of the learner. One workshop, designed especially for teams of home economics and consumer education teachers, is cosponsored by the Department of Home Economics Education and of Household Economics and Management. The evaluation course and the adult education seminar, though offered by the Department of Home Economics Education, are appropriate for professionals in any educational field or agency.

Units are two and three weeks in length. They may be combined with each other, with unit courses offered by other departments, or with independent study, to provide a longer program. However, each involves full-time participation for the designated period.

Early applications are requested. Registration will be completed in the first meeting of the class for each course.

Tuition is at the rate of \$55.00 per credit hour. The Summer Session fee is \$5.00 per week.

For further information and application forms, address: Director, Home Economics Education Units Courses, N-134 Van Rensselaer Hall, Cornell University, Ithaca, New York 14850.

H.E. Ed. 436u. INTERDEPARTMENTAL WORKSHOP IN CONSUMER EDUCATION (U,G) *June 30 through July 18*

Three hours credit. M T W Th F 9-4. Van Rensselaer N-225. Misses Bymers and Minot.

The workshop is designed for current and prospective classroom teachers of

consumer education. Teaching teams representing business education, home economics, and/or social studies are encouraged to apply. The growing recognition of the place of consumer education in the secondary schools has led to a need for interdepartmental preparation.

The main emphases of the workshop will be on consumer questions and problems, the teaching-learning process, and the interdepartmental coordination of consumer education curricula. Participants will be able to select particular topics for in-depth exploration. A combination of lectures and seminars with maximum opportunity for individual study will be provided.

H.E. Ed. 515u. METHODS AND MATERIALS FOR TEACHING HOME ECONOMICS (G) *June 30 through July 18*

Three hours credit. M T W Th F 9 and 2. Van Rensselaer N-207. Miss Stevens.

Emphasis on the development and implementation of instructional plans in home economics based on analysis of the teaching-learning process and sound principles of curriculum development. Experiences provided in the selection and use of teaching procedures and resource materials for learners of different backgrounds and levels of ability.

H.E. Ed. 540u. SEMINAR IN ADULT EDUCATION: THE TEACHING-LEARNING PROCESS IN ADULTS (G) *July 28 through August 8*

Two hours credit. M T W Th F 9-12. S-U grades optional. Van Rensselaer N-225. Miss Imbler.

Designed for administrators and supervisors of adult education programs, teachers of adults, cooperative extension agents, and graduate students in adult education, this seminar is concerned with significant problem areas in adult education. A different problem area will be considered each time the seminar is offered. The seminar may be repeated for credit with the permission of the instructor. The 1969 Summer Session seminar will deal with the psychological and physiological factors affecting learning in adults, learning theory, and motivation theory as they apply to adult education. Important consideration will be given to implications of theory and research in these areas for teaching and program planning in adult education.

The two-week session will be a workshop course with class sessions scheduled for the mornings, leaving afternoons free for intensive independent study and/or small group work. No other class should be scheduled during this two-week period.

H.E. Ed. 559u. EVALUATION (G) *July 21 through August 8*

Three hours credit. M T W Th F 9 and 2. Van Rensselaer N-207. Miss Gritzmacher.

For high school and college teachers, administrators, extension agents, and educational research workers. Students without experience in any of these professional positions are admitted by permission of the instructor.

Basic principles of evaluation studied in relation to specific methods of appraising educational programs or individual achievement. Opportunities will be given for constructing and using evaluation instruments.

HOTEL ADMINISTRATION

JUNE 23-AUGUST 8

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 in hotel administration, one to three weeks in length, are offered in the Summer Session. A circular giving full details of these courses has been issued and will be sent upon request. For this circular, for other information about the work in the School, *and for admission to these courses*, address: Dean R. A. Beck, Statler Hall, Cornell University, Ithaca, New York 14850.

LATIN AMERICAN LANGUAGE AND AREA PROGRAM

The Latin American Language and Area Center, in cooperation with the Institutional Assistance Section of the United States Office of Education, offers a program of intensive language instruction in Portuguese and Quechua. The summer program also includes study opportunities in the literature and culture of the Andes.

(Note that beginning Spanish will be offered in the regular six-week Summer Session; see p. 57.)

Financial aid is available to a limited number of graduate or undergraduate students (U.S. citizens) under the National Defense Education Act, Title VI. For further information, fellowship applications, and application for admission, write: Director, Latin American Studies Program, 205 Rand Hall, Cornell University, Ithaca, New York 14850. Deadline for admissions applications is May 1, 1969.

Andean Studies

QUECHUA

101S. ELEMENTARY QUECHUA (U,G) *June 16-August 8*

Eight hours credit. Twenty hours of instruction per week for eight weeks. M T W Th F 8-10 and 11-1. Lincoln 304. Mr. Solà and staff.

An intensive introductory course in the Cuzco dialect of Quechua, emphasizing auditory and speaking skills.

ROMANCE STUDIES

Spanish 497. SOCIOLOGICAL IMPLICATIONS OF THE NOVELA INDIANISTA (U,G) *June 16-August 8*

Three hours credit, or two hours for students coregistered in Quechua 101S. M T W Th F 2-3. Lincoln 304.

Lectures in Spanish on Spanish-American authors concerned with Indian problems.

Area Studies

History 320. LATIN AMERICAN HISTORY SINCE INDEPENDENCE (U,G)
(See p. 44.)

Portuguese

101u. ELEMENTARY PORTUGUESE (U,G) *June 16-July 18*

Six hours credit. M T W Th F 9-12 and 2-3. Morrill 201. Mr. Eastlack and staff.

102u. ELEMENTARY PORTUGUESE (U,G) *July 21-August 22*

Six hours credit. Prerequisite, Port. 101u or equivalent and consent of instructor. M T W Th F 9-12 and 2-3. Morrill 201. Mr. Eastlack and staff.

Portuguese 101u and 102u constitute twenty hours of instruction per week for ten weeks.

203u. COMPOSITION AND CONVERSATION (U,G) *June 16-July 11*

Three hours credit. Prerequisite, qualification in Portuguese and consent of instructor. M T W Th F 9-12 and M W F 2-3. Morrill 202. Mr. Eastlack and staff.

204u. COMPOSITION AND CONVERSATION (U,G) *July 14-August 8*

Prerequisite, Port. 203u or equivalent and consent of instructor. M T W Th F 9-12 and M W F 2-3. Morrill 202. Mr. Eastlack and staff.

Portuguese 203u and 204u constitute eighteen hours of instruction per week for eight weeks.

SUMMER PROGRAM IN MARINE SCIENCES

JUNE 7-JULY 3

This program is offered jointly by Cornell University and the University of New Hampshire. It is designed as a general introduction to marine sciences, with emphasis on field aspects, and includes topics such as biology of shore and marine organisms including algae, sea grasses, plankton, invertebrates, teleosts, elasmobranchs, birds, and marine mammals; the tools, techniques, and perspectives of oceanography; marine microbiology and toxins; geological oceanography and coastal geology; mud flat, salt marsh and marine ecology; bird (especially sea gull) behavior; photography in the marine environment; and the techniques and problems of commercial fisheries in the New England area. Faculty will consist of some twenty marine scientists drawn principally from Cornell University and the University of New Hampshire, but including also some specialists and guest lecturers from other universities, the commercial fishing fleet, and industry. The first two weeks will be presented at the Isles of Shoals, ten miles offshore at Portsmouth, N. H., and the second through facilities of the University of New Hampshire including the campus at Durham, the Jackson Estuarine Laboratory on Great Bay, and field facilities at Odiorne's Point on the Atlantic shore.

Enrollment in this program is limited to thirty students. Expenses will total \$460, half payable to Cornell University and half to the University of New Hampshire. This covers tuition, fees, board, room, health insurance, and special transportation during the four-week period. A limited number of scholarships were made available through funds from the Link Foundation in 1968, and application has been made for similar support in 1969.

Two credits will be awarded by Cornell University and two credits separately by the University of New Hampshire for successful completion of the course. Both parts must be completed to obtain credit for either half. All

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application procedures for both halves will be handled by Cornell. The Cornell two-credit course is described below.

For further information and application forms, address Director, Summer Program in Marine Sciences, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Biol. Sci. 374u. FIELD MARINE BIOLOGY (U,G) June 7 to 21

Two hours credit. Prerequisite, at least a full year of college biology. Daily lectures, laboratory, and field work. Miss Bush, Mr. Anderson (invertebrate zoology); Mr. Posner (marine ecology, oceanography); Mr. Gilbert (elasmobranchs, marine mammals); Mr. Hewitt (marine birds); Mr. Raney (marine fish); Mr. Kingsbury (marine algae), in charge; supplemented by guest lecturers.

READING AND STUDY SKILLS FOR HIGH SCHOOL STUDENTS PREPARING FOR COLLEGE (NONCREDIT)

JUNE 30-AUGUST 1

Purpose. This program is designed to teach students the reading and study skills necessary for successful scholarship at the college level. It is not for retarded readers or students with below-average ability.

Time Involved. Students will meet daily from 9 to 12 beginning Monday, June 30, and ending August 1. Classes will not be in session Friday, July 4. Additional work outside of class time is required each day. If students hope to get the full benefit of the course, they should limit their extracurricular activities during July.

Class Work. Instruction will be given in the following areas:

1. Reading. The improvement of both speed and comprehension; special techniques for reading textbooks.
2. Writing. The procedure involved in selecting a topic and conducting the research for a term paper. Orientation and use of university libraries.
3. Study Skills. Scheduling time; taking lecture notes; taking notes from textbooks; preparing for and taking examinations; reading selectively; reading imaginative prose and poetry.
4. Listening Skills. Improvement of ability in the registry and retention of spoken information. "Effective Listening," a basic systems program developed by the Xerox Corporation, will be used.
5. General aspects of communication. Understanding basic principles of organization; vocabulary building; critical reading of factual material; development of oral facility.

Laboratory Work. Students will work daily in the reading laboratory to practice good reading techniques on reading machines which have proved to be instrumental in increasing both the rate of reading and the level of comprehension. Students will be permitted to use laboratory equipment beyond the time required in their regularly scheduled periods.

Who May Apply? High school students living within commuting distance of Ithaca who will have finished their junior or senior years in June, 1969,

and who plan to go to a college or university may apply. Registration will be limited to thirty students. Early applications are encouraged.

Cost. The tuition for the program is \$130. A preregistration deposit of \$30.00 is required following notification of admission. The remaining \$100 must be paid on the first day of class. There are no scholarships offered in the program.

How to Apply. For application forms and additional information, address Mr. Walter Pauk, Director, Reading-Study Center, 304 Olin Hall, Cornell University, Ithaca, New York 14850.

SHELL MERIT FELLOWSHIP PROGRAM

JULY 1-AUGUST 8

Limited enrollment. For selected secondary school teachers of biology, earth science, general science, chemistry and physics from the United States and Canada. Participants will plan, develop, and produce self-operated instructional systems to individualize science instruction. Address inquiries to Shell Merit Programs, Stone Hall, Cornell University, Ithaca, New York 14850.

SIX-YEAR Ph.D. PROGRAM

JUNE 25-AUGUST 8

Limited to students who will join the class of 1972 in a special program leading to doctoral study, this preliminary summer session is designed to introduce students to some of the major areas of college study, to give the experience of small seminars, and to develop reading knowledge of essential languages. Elementary and advanced instruction will be offered in French, German, and Russian. A seminar in humanities and two in the social sciences will also be offered. Each student in the program will enroll in one seminar and one language course.

SUMMER STUDIOS IN ART

Unit Courses in
Painting, Sculpture, and Graphic Arts

JUNE 30-AUGUST 8

The Art Department of Cornell University presents a program of intensive instruction for persons wishing to concentrate in the practice of painting, sculpture, and/or graphic arts under the supervision of a faculty of prominent contemporary artists. Will Barnett, Kenneth Evett, and Norman Daly will teach painting, James Wines will instruct in sculpture, and Stephen Poleskie will teach graphic arts.

The many scenic wonders of this Finger Lakes Region are an inspiration to the practicing artist. In addition, the summer program offers lectures, concerts, exhibitions and Summer Theatre productions usually found only in large metropolitan centers.

80 SUMMER STUDIOS IN ART

Courses in the three arts are available in each of three two-week periods: June 30–July 11; July 14–July 25; and July 28–August 8. A student may enroll in one, two, or three periods and earn a total of from two to six hours of credit. Two credit hours may be earned in any one period in either painting, sculpture or graphic arts, or in any two of the three arts for an hour of credit in each.

Instruction will be adapted to students of all levels of experience and will involve individual assignments and criticism with ample opportunity for studio participation.

For additional information and an application form, write: Director, Summer Studios in Art, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

UNIVERSITY ADMINISTRATION

James A. Perkins, President of the University.
Dale R. Corson, University Provost.
Mark Barlow, Jr., Vice President for Student Affairs.
Stuart M. Brown, Jr., Vice President for Academic Affairs.
John E. Burton, Vice President—Business.
Lewis H. Durland, University Treasurer.
W. Keith Kennedy, Vice Provost.
Franklin A. Long, Vice President for Research and Advanced Studies
(to June 30, 1969).
George W. Rathjens, Vice President for Research and Advanced Studies
(July 1, 1969).
E. Hugh Luckey, Vice President for Medical Affairs.
Thomas W. Mackesey, Vice President for Planning.
Paul L. McKeegan, Director of the Budget.
Robert D. Miller, Dean of the University Faculty.
Steven Muller, Vice President for Public Affairs.
Arthur H. Peterson, University Controller.
Neal R. Stamp, Secretary of the Corporation and University Counsel.

ADMINISTRATIVE BOARD

Martin W. Sampson, M.S., Director, Division of Summer Session and Extramural Courses; Director, Division of Unclassified Students; Assoc. Professor, Industrial Engineering and Operations Research.
James H. Clancy, Ph.D., Chairman of Department, and Professor of Theatre Arts.
W. Donald Cooke, Ph.D., Dean of the Graduate School, and Professor of Chemistry.
J. Milton Cowan, Ph.D., Director, Division of Modern Languages, and Professor of Linguistics.
Tom E. Davis, Ph.D., Professor and Chairman, Department of Economics.
Herbert L. Everett, Ph.D., Director of Resident Instruction, College of Agriculture; and Professor of Plant Breeding.
Jean Failing, Ph.D., Coordinator of Resident Instruction, College of Home Economics; Professor of Home Economics; Counselor of Students, Home Economics Administration.
Robert D. Miller, Ph.D., Dean of the University Faculty; Professor of Soil Physics and Agronomy, Department of Agronomy.
Howard G. Smith, Ph.D., Director, Division of Engineering Basic Studies; Professor of Electrical Engineering.

FACULTY

Charles D. Ackerman, Ph.D., Assistant Professor of Sociology.
Barry B. Adams, Ph.D., Assistant Professor of English.
Frederick Adams, Ph.D., Assistant Professor of History, State College of New York at Plattsburgh, New York.
Howard G. Andrus, Ph.D., Professor of Guidance and Personnel Administration; Director, Educational-Vocational Guidance.

82 FACULTY

- Joe P. Bail, Ph.D., Professor of Agricultural Education; Director of Agricultural Education Summer Program.
- Will Barnett, Visiting Artist from New York City, New York.
- James C. Bartholomew, Teaching Fellow in Biochemistry and Molecular Biology.
- David Lee Bartlett, Teaching Assistant, Reading and Study Center, Department of Education.
- Gordon Beck, Ph.D., Assistant Professor of Theatre Arts.
- Jonathan P. Bishop, Ph.D., Associate Professor of English.
- Allan Bloom, Ph.D., Associate Professor of Government; Faculty Fellow, Society for the Humanities.
- Isadore Blumen, Ph.D., Professor of Statistics, Industrial Labor and Relations School.
- John D. Boyd, Ph.D., Assistant Professor of English.
- Clyde W. Bresee, Ph.D., Director of Guidance, Athens Area Schools, Athens, Pennsylvania.
- James Brower, Research Associate, Ecology and Systematics, Department of Biological Sciences.
- Andrew A. Browman, Ph.D., Assistant Professor of Physics.
- Gwen J. Bymers, Ph.D., Professor of Household Economics and Management.
- O. Edmund Clubb, M.A., Foreign Service Officer, ret. (Director, Office of Chinese Affairs, Department of State).
- Michael J. Colacurcio, Ph.D., Associate Professor of English, Ohio State University, Columbus, Ohio.
- Stephen Cole, Assistant Professor of Theatre Arts.
- W. S. Cole, Ph.D., Professor of Geological Science, Emeritus.
- Robert M. Cotts, Ph.D., Associate Professor of Physics.
- Lowell C. Cunningham, Ph.D., Professor of Farm Management and Agricultural Economics.
- Norman D. Daly, M.A., Professor of Art.
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 Richard R. Rosinski, Teaching Fellow in Department of Psychology.
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84 FACULTY

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Beth Stevens, Teaching Fellow in Home Economics Education.

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Robin M. Williams, Jr., Henry Scarborough Professor of the Social Sciences.

James Wines, Sculptor, Visiting Artist from New York City, New York.

Allen W. Wood, Ph.D., Assistant Professor of Philosophy.

Joan R. Yanuzzi, Director of Guidance of Sayre Area Schools, Sayre, Pennsylvania.

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Applications for the Eight-week Session must be received by June 9. The deadline date for the Six-week Session is June 18. Applications will be accepted after the deadline dates, but in this case registration material will not be mailed out in advance and a place in class cannot be guaranteed. Priority for individual course enrollment is given in the order in which applications are received. See pages 5-27 for additional information.

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