

Cornell University
Announcements
Summer Session
1972

Cornell University Announcements

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Cornell University

Summer Session

1972

The office of the Summer Session, Room B-20 Ives Hall, is open from 8:00 a.m. to 4:30 p.m. Monday through Friday during the Summer Session. The telephone number of the office and of the dean, Martin W. Sampson, is 256-4987.

An application form for the Summer Session is in the back of this *Announcement*.



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



Calendar of the Summer Session

1972

Living units for six-week Summer Session open for occupancy.

Tuesday, June 27

Summer Session registration in Barton Hall, 9:00–11:30 a.m. and 1:00–3:30 p.m.

Wednesday, June 28

Classes begin. Late registrants report to the Summer Session office, B-20 Ives Hall. Persons registering without prior approval must pay a \$10 late registration fee.

Thursday, June 29

Last day for withdrawal from the regular Summer Session without payment of a fraction of tuition and fees.

Friday, June 30

All classes will be in session.

Monday, July 3

Last day for payment of tuition and fees at the bursar's office, which closes at 4:30 p.m.

Wednesday, July 5

Last day for making any changes in registration without payment of a change of registration fee. A \$10 change of registration fee will be charged after this date. Cancellation of a course without addition of another course will require payment of prorated tuition and general fee.

Monday, July 10

Last day for making any changes in registration except for reasons beyond the control of the student.

Wednesday, July 19

Last day of first three weeks of regular Summer Session.

Friday, July 21

Registration for the second period of any three-week unit course elected by students not previously registered, at the Summer Session office, B-20 Ives Hall.

Monday, July 24

Final examinations begin. See schedule on p. 21.

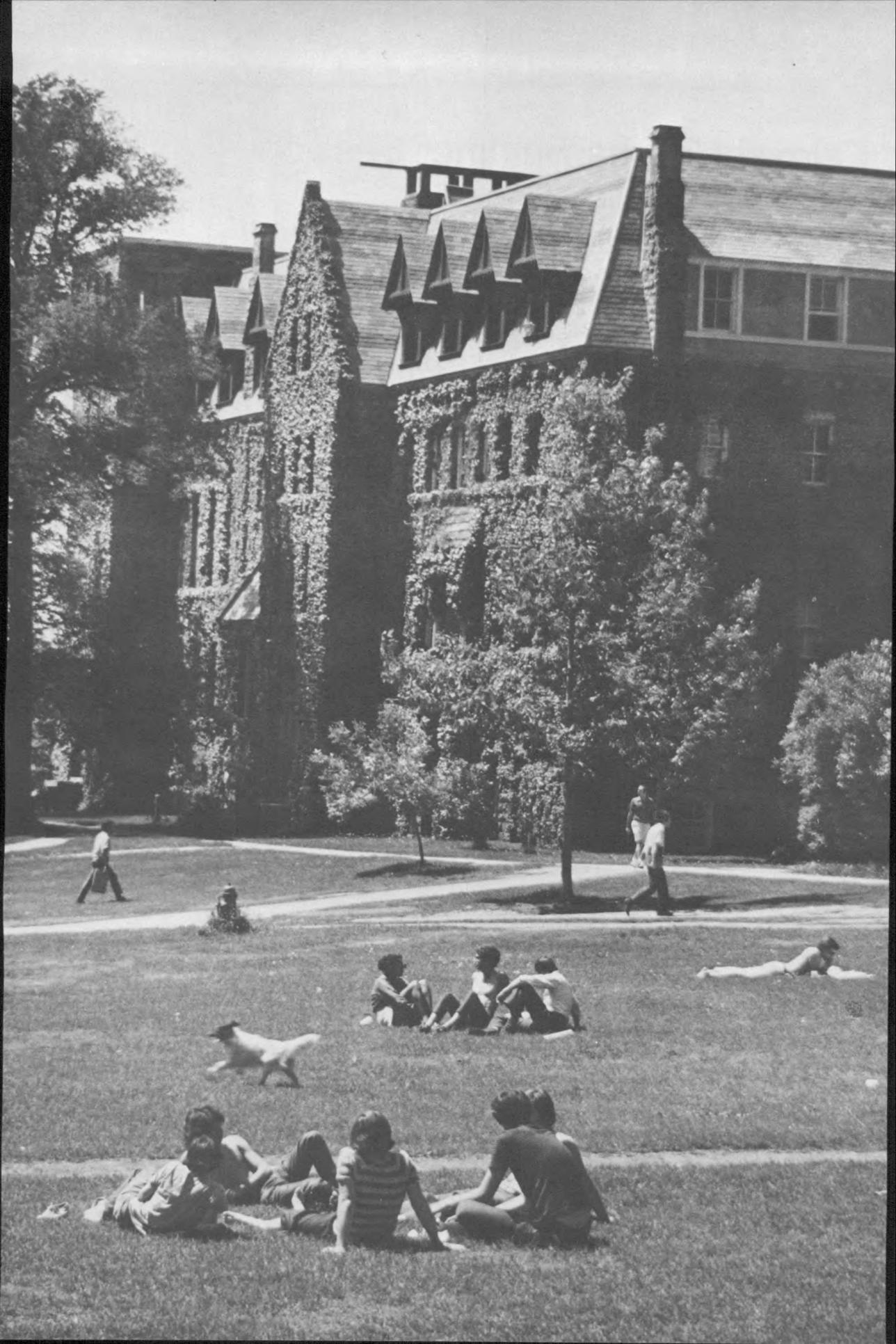
Thursday, August 10

Regular Summer Session ends, 4:00 p.m.

Friday, August 11

Living units for six-week Summer Session close at 2:00 p.m.

Saturday, August 12



Cornell University

Summer Session

Founded in 1865 by Ezra Cornell and Andrew D. White, Cornell University, youngest member of the Ivy League and an arm of the State University of New York, comprises sixteen fully accredited schools and colleges. Its curriculum encompasses most major segments of education. The years since it was founded have seen tremendous growth and many changes, yet the principles of diversity and intellectual freedom upon which the University was founded still exist today.

Cornell is big, but not mammoth. Its campus, spreading over 740 acres, contains ninety major buildings which house classrooms, laboratories, libraries, and residence halls. Its potential for growth can easily be seen by the additional buildings now being constructed.

Cornell's more than 15,000 students are as diverse as the university they attend, coming from every state in the nation and 89 foreign countries. Similarly, its outstanding faculty, numbering about 1,800, is drawn from many different locales.

While the student population is considerably smaller in the summer, it is still as diverse in origin. The Summer Session of 1971 brought over 4,300 students to the campus from forty-one states and thirty foreign countries. The 1972 Summer Session offers over three hundred credit courses and more than forty Special Programs for groups of varying sizes and interests. Unlike the academic year, the summer population ranges from the high school junior taking advanced placement courses to the business executive enrolled in a Special Program.

The course offerings in the regular six-week Summer Session are available to college-bound secondary school seniors, undergraduate and graduate degree candidates, teachers, and other persons interested in personal or professional improvement. The summer schedule is planned in cooperation with the faculties of the various schools and colleges, with particular regard for courses that can be taught successfully in a short term and in a summer environment. The same standards of instruction and academic performance are maintained as those of the academic year.

The city of Ithaca is one of character and charm, ringed by rolling hills and laced with deep gorges. Situated at the southern end of Cayuga Lake, it serves as the county seat for Tompkins County, an essentially rural area. Education is a major industry in Ithaca with two well-known educational institutions facing each other across the valley—Cornell University on East Hill and Ithaca College on South Hill. Together they provide cultural and recreational opportunities that help make the city an interesting and stimulating place to live.

When summer comes to Ithaca the people come too, since this is a choice vacation spot in the famed Finger Lakes Region of west central New York State. Cayuga Lake, one of the largest of the Finger Lakes, attracts many water skiers and boat enthusiasts. Ithaca Falls, tumbling down Fall Creek Gorge, is a favorite spot of camera buffs. Golfers have a choice of four courses in the area, and for swimming, picnics, boating, and spectacular scenery, residents and visitors alike can go to the three state parks close by. Many picturesque restaurants dot the countryside and range from an old gabled country inn to one located in the former city railway station. Ithaca offers the unique combination of a cosmopolitan atmosphere in a rural setting.

Summer is for enjoyment as well as for study, and at the University there is a full schedule of concerts, lectures, plays, art exhibitions, films, and folk and square dancing. For the more energetic, there is an eighteen-hole golf course, tennis and squash courts, two indoor swimming pools, and gym facilities. The trails down the two deep gorges which cut through campus attract many walkers, as does Sapsucker woods, the 180-acre bird sanctuary northeast of the main campus. Summer at Cornell can be a most rewarding experience.

Admission

It is the policy of Cornell University to actively support the American ideal of equality of opportunity for all, and no student shall be denied admission or be

otherwise discriminated against because of race, color, creed, religion, or national origin.

Admission of undergraduate or graduate students to the Summer Session establishes no priority with respect to admission to the regular academic terms. Students seeking admission to Cornell undergraduate colleges should apply directly to the Office of Admissions, 247 Day Hall. Information on admission to the Graduate School can be found on p. 13.

Categories of Admission

Students are eligible for admission to the Summer Session in the following categories: undergraduates, graduates, and special students.

The undergraduate category includes persons who are candidates in good standing for a Bachelor's degree or precollege secondary school graduates who have been accepted for admission to an accredited college or university. No other secondary school students will be accepted except in certain Special Programs of the Summer Session, described on pp. 45-48.

The graduate category includes candidates for advanced degrees either at Cornell University or other colleges or universities.

Special students include teachers and members of the general public who are not candidates for academic degrees and who wish to take courses to meet certification requirements, for personal interest, or for professional improvement. Secondary school students who do not classify as "undergraduates" (see above) are not eligible for admission as special students. A student who has been suspended or dropped from his college or university is not eligible for admission as a special student until at least one year after the date of his suspension or separation.

Auditors

A graduate or special student who wants to attend a course or courses but does not want credit, may register for such courses as an auditor. Undergraduate students are not permitted to register for audit.

Auditing a course requires regular attendance in class and completion of all required work except the final examination. The audited course will appear on the student's record unless he is a student in the Cornell University Graduate School; in this case, no record of the audited course will appear. Tuition and fees will be charged at the same rate as for credit.

Application

Six-Week Session

Admission to the six-week Summer Session is gained through formal application. The application form and instructions are included in the back of this *Announcement*. All parts of the form pertaining to the student who is applying must be filled out in full. A \$10 non-refundable application fee is required of all students, except Cornell undergraduate and graduate degree candidates, and must accompany the application for admission. Checks should be made payable to Cornell

University. Applications will be accepted up to registration day. However, notification of acceptance to register will not be sent for applications received after June 19. Late applications are welcomed, but obviously the risk of finding course enrollment filled is greater.

Special Programs

Applicants applying for admission to the Special Programs of the Summer Session, are not to use the form in the back of this catalog. Each Special Program has a separate application form which is obtained by request from the director of that program. For information on where to write to obtain applications, see Special Programs, pp. 45-57.

Academic Credit

Courses offered in the six-week Summer Session are assigned appropriate hours of credit. The same is true in many of the Special 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 general a student may register for a maximum of eight credit hours in the six-week Summer Session. Permission for an undergraduate to register for more than eight credit hours will be granted only to students with high academic averages, upon the recommendation of their advisers and the approval of the dean of the Summer Session. Cornell undergraduates will need the approval of their college official (see listing on p. 9).

Permission for a Cornell graduate student to register for more than eight credit hours will be granted only upon recommendation of his Special Committee Chairman. (For information concerning residence credit towards degrees in the Cornell Graduate School, see p. 13.)

A candidate for a graduate degree in an institution other than Cornell, who is planning to apply his Summer Session credit towards his degree, does not register in the Graduate School, but only in the regular Summer Session for a maximum of eight credit hours. Approval of the dean of Summer Session is required for programs exceeding the maximum.

A special student wishing to register for more than eight credit hours must have his program approved by the dean of the Summer Session.

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

(U): Courses marked (U) carry credit only at the undergraduate level.

(U,G): Courses marked (U,G) 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): Courses marked (G) 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.

Transfer Credit

A graduate or undergraduate degree candidate from a college or university other than Cornell University should consult the appropriate official, either in the college to which he has been admitted, or where he is now matriculated, for advice in planning his summer study program. This is important in order to assure that the credit he earns will be accepted toward his degree program. Credit for courses in the regular Summer Session is comparable to credit for courses offered during the academic year at Cornell.

Credit Toward Cornell Degrees

Cornell graduate degree candidates may seek residence credit toward degrees in the amount of two-fifths of a unit for a program of six or more credit hours in the Summer Session. Request for residence credit is made to the Graduate School and must be supported by the student's Special Committee. See pp. 13-14 for further information regarding the Graduate School.

A Cornell undergraduate degree candidate, or a student accepted for fall admission as an undergraduate of Cornell University, will be admitted to the regular Summer Session only after the appropriate officer from the following list has approved and signed his application for admission.

College of Agriculture and Life Sciences
Professor H. L. Everett

College of Architecture, Art, and Planning
Dean Kermit C. Parsons, Associate Dean
Charles W. Pearman, Professors O. M. Ungers,
John P. Shaw, Jason Seley

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

College of Engineering
Basic Studies: Mr. F. J. Ahimaz, Mr. C. Carr, Jr.
Chemical Engineering: Professor K. B. Bischoff
Civil and Environmental Engineering: Professor
Walter R. Lynn
College Program: Professor William H. Erickson
Electrical Engineering: Professor J. L. Rosson
Industrial Engineering: Professor B. W. Saunders
Materials Science and Engineering: Professor
H.H. Johnson, Mr. L. W. VanDuzer
Mechanical Engineering: Professor D. G. Shepherd,
Mr. R. L. Jewett

Applied and Engineering Physics: Professor
P. L. Hartman

School of Hotel Administration
Dean R. A. Beck, Assistant Dean P. L. Gaurnier,
Miss Edna M. Osborn

College of Human Ecology
Mrs. Joyce McAllister

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 (failure). A description of various performance levels follows:

A- to A+ Very good to excellent: comprehensive knowledge and understanding of subject matter, marked perception and/or originality.

B- to B+ Good: moderately broad knowledge and understanding of subject matter, noticeable perception and/or originality.

C- to C+ Satisfactory: reasonable knowledge and understanding of subject matter, some perception and/or originality.

D- to D+ Minimal: bare minimum knowledge and understanding of subject matter; severely limited perception and/or originality; "failing" work.

F Unsatisfactory: unacceptably low level of knowledge and understanding of subject matter; no perception and/or originality.

There are two exceptions to the above:

1. Auditors will not receive grades: See p. 8.
2. S-U grading (Satisfactory-Unsatisfactory) may be used for students registered for research or other individual work, and in certain courses so designated by the instructors at the beginning of the summer term. In courses where optional grading (S-U) is permissible, the instructor will report the names of students who have been granted permission to be graded on this basis to the Summer Session Office before the end of the second week of classes. Cornell undergraduate students must also obtain the approval of their school or college official (see above).

Grade slips will be mailed to the home address of all Summer Session students as soon after August 30 as they are received. Copies of the grade slips will automatically be sent to the school or college offices of Cornell undergraduate and graduate degree candidates. *Grades will not be given over the telephone under any circumstances.*

Incompletes

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



INC (incomplete). It is the student's responsibility to make specific arrangements with his instructor to complete the course work and have the grade reported to the Summer Session office. If the course is completed within the time allowed it will appear twice on the record in the office of the registrar, with both the incomplete and the final mark being recorded. Satisfactory completion of the course does not eliminate the original "incomplete" designation.

Transcripts

Students needing transcripts of their Summer Session record should request them from the Office of the Registrar, 240 Day Hall. With each order there is a charge of \$2 for the first transcript and \$1 for each copy thereafter.

Registration

Registration material will be mailed to all persons who have filed a satisfactory application for admission prior to June 19. Applications will be accepted up to registration day, but registration material will not be mailed out after June 19. The registration material will consist of the following:

1. A set of registration coupons (blue designates undergraduate students; white, graduates and special students). The coupon marked "certificate of admission" will contain the time of day the student is to appear to register at Barton Hall on Wednesday, June 28. Each student may partially complete the registration coupons (except for the courses of study) and should bring them with him (intact) when he appears to register. The coupons should not be torn apart.
2. A brochure containing information about available living accommodations and an application for reservation of residence hall space. If the student wishes to stay in a residence hall, the application should be filled out immediately and mailed to the Department of Student Housing, 223 Day Hall, with an advance payment of \$20 (which is applied toward the residence charge). Checks should be made payable to Cornell University. For more detailed information see pp. 15-16.
3. A letter from the Safety Division explaining automobile regulations and a Traffic Bureau IBM card to be completed at registration time. Each student should read the letter carefully and bring both it and the IBM card with him to registration. The Traffic Bureau IBM card must be completed by the student whether he will have a car on campus or not and handed in at the Safety Division table at Barton Hall on registration day. For further information, see p. 17.

Registration will take place on Wednesday, June 28, at Barton Hall from 9:00 to 11:30 a.m. and from 1:00 to 3:30 p.m. Directions for registration procedures will be issued at the entrance. Students who have not received their registration material but who have filed an application for admission, should report to the

admissions table; students who have not filed an application for admission are to report directly to the information table at Barton Hall.

Registration in Unit Courses

Unit courses are indicated by a *u* immediately following the course number, and are less than six weeks in length.

Unit courses in the regular Summer Session are three weeks in length and are held from June 28 to July 21 and from July 24 to August 11. Students registering for a unit course held in the first three weeks of the Summer Session will register at Barton Hall on June 28, the regular registration day, at the time indicated on their registration coupons. Students registering only for a unit course offered in the last three weeks of Summer Session will register at the Summer Session office, B-20 Ives Hall, on July 24 at a time of day that does not interfere with their attendance in class.

Registration in Special Programs

Students registering for courses in the Special Programs of the Summer Session will register at the first class meeting of the course at the time and place indicated on their registration material.

Tuition and Fees

Tuition and fees are due and payable at the bursar's office in Day Hall on June 28, registration day. The last day for payment without a penalty is Wednesday, July 5. The bursar's office closes at 4:30 p.m. A penalty of \$10 will be charged if payment is made after this date.

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

Tuition

The rate of tuition is \$75 per credit hour. Tuition is charged according to the number of credit hours for which the student is registered. Students registered in the regular Summer Session, who are permitted to elect one or more courses from a Special Program, will be charged at the rate of \$75 per credit hour. (See p. 45.)

Fees

Application Fee. Each applicant who is not a Cornell undergraduate or graduate degree candidate must enclose \$10 with his application for admission. This fee is nonrefundable. Checks are to be made payable to Cornell University.

General Fee. In addition to tuition, a fee of \$5 per week must be paid by all students except students who were registered full time in the Cornell Graduate School during either term of the previous academic year. The General Fee covers University medical

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services, membership in the University Unions including use of facilities at Willard Straight Hall and the new North Campus Union, use of library and athletic facilities, and participation in certain Summer Session events.

Course Fees. 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 course description. Course fees are *nonrefundable* and will not be prorated if a student cancels a course or withdraws from the Summer Session.

Late Registration Fee. Persons who fail to appear to register on June 28 will be charged a late registration fee of \$10 unless the fee is to be waived by prior approval of the dean of Summer Session. If a student knows that circumstances beyond his control will prevent him from registering at the specified time, he should write to the dean of Summer Session explaining the circumstance, and request permission to register late without payment of the late fee. If permission is granted, a letter to that effect will be sent to the student who must present the letter when he does appear to register.

Students registering for the second half of the regular Summer Session (July 24 to August 11) will be charged a \$10 late fee if they do not appear to register on July 24 and have not received prior approval to register late. This same ruling applies for any student appearing to register for a Special Program after the registration date for that program has passed.

Change of Registration. Changes in registration made after July 10 will be approved only upon payment of a \$10 change of registration fee. Change of registration includes cancellation of a course, change from one course to another, change from undergraduate to graduate level 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 in person at the Summer Session office, B-20 Ives Hall. Except for reasons beyond the control of the student, no change in registration will be permitted for the regular Summer Session after 4 p.m. on July 19.

Where change of registration involves cancelling a course without adding another course, the tuition for the course cancelled will be charged at the rate of 25 percent per week, or fraction of a week, from registration day to the effective date of the change of registration. Failure to attend a course without official cancellation will result in a grade of F on the student's record for that course.

Graduate Registration Fee. Applicants accepted for admission to the Graduate School as well as to the regular Summer Session who have not matriculated previously at Cornell must pay a fee of \$50 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 non-refundable.

For other information concerning Graduate School regulations, see pp. 13-14.

Other Fees and Regulations Concerning Payments

Late Payments

Any student officially registered in the Summer Session who fails to pay his tuition, fees, and other indebtedness at the bursar'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 bursar may allow an extension of time to complete payments. For such an extension, the student will be assessed a fee of \$5. A reinstatement fee of \$10 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 bursar and the registrar, which must be presented in writing, the latter assessment may be waived in any individual case.

Cashing Checks

The bursar of the University accepts checks drawn on banks in the United States 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 an amount greater than the sum due and returning the excess in cash. Students therefore are advised to open an account in an Ithaca bank as soon as they arrive in town, or else provide themselves with travelers' checks, drafts on New York City banks, money orders, or other forms of credit instruments which a bank will cash in the ordinary course of business.

Checks for amounts of \$25 or less may be cashed at the main desk in the lobby of Willard Straight Hall upon presentation of the student's Official Registration Certificate. (See p. 18.)

Withdrawal from the Summer Session

A student may apply for withdrawal from the regular Summer Session at any time by appearing in person at the Summer Session office. Any student who withdraws from the six-week session will be charged tuition and the General Fee at the rate of 25 percent per week, or fraction of a week, from the registration day to the effective date of withdrawal. No tuition or General Fee will be charged in the six-week session if withdrawal is made by Friday, June 30.

Students who withdraw after June 30 may, upon proper application, receive a refund of tuition and the General Fee in accordance with the following schedule. (Refunds will not be made for course fees).

Withdrawal Dates	Percent Refunded
July 1-4	75%
July 5-11	50%
July 12-18	25%
July 19 and after	0%

Approval of withdrawal requires the surrender of the student's Official Registration Certificate and all privileges it provides as of the date withdrawal is granted. A grade of F (failure) will automatically be recorded for all courses in which a student is enrolled if he withdraws without officially notifying the Summer Session office and the full amount of tuition and fees will be due and payable.

Withdrawal from Special Programs

A student wishing to withdraw from a Special Program of six weeks' duration held during the same period as the regular Summer Session (June 28 to August 11) will be governed by the same method of prorating tuition and the General Fee as stated above. A student who wishes to withdraw from a Special Program that does not fall into the above category, should check with the bursar's office in Day Hall for information concerning any refund of tuition and fees after he has notified the Summer Session office of his intention to withdraw.

Financial Aid

There are no general University scholarships available for Summer Session study.

Students registered in the Summer Session are normally not eligible for University financial aid. In special cases, however, when the applicant is a regular full-time student at Cornell and his summer program has the full approval of his faculty adviser, he will be considered for loan assistance. More specific information can be obtained from the Office of Scholarships and Financial Aid, Room 105, Day Hall.

Opportunities for part-time employment during the summer are so limited that students should not rely on this means of financing any part of their Summer Session expenses. An application for part-time summer employment can be obtained by contacting University Personnel Services, B-12 Ives Hall, or by writing to the Office of Scholarships and Financial Aid, 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 partial fulfillment of residence requirements for the following advanced degrees, under regulations of the faculty of the Graduate School, and with prior approval of the candidate's Special Committee: 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 Fine Arts (M.F.A.) [only in English]; 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, a minimum of six hours in the six-week session will count as two-fifths of a residence unit if approved in advance and reported as acceptable by the student's Special Committee.

Requirements for Master's degrees may, upon approval of the General Committee of the Graduate School, be completed solely during the summer period if instruction in the chosen major and minor subject 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.

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.

Admission

Students intending to become candidates for advanced degrees at Cornell should write to the Dean of the Graduate School, Sage Graduate Center. If the *Announcement of the Graduate School* is also wanted, a zip code must be included with the 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

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 may be obtained from the Graduate School desk at Barton Hall on registration day. The registration must be completed within *one week* of registration day. To register, each candidate must file a statement-of-courses form properly approved by his Special Committee. Each *new* candidate must also 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.

Registration Fee. On admission to the Graduate School, the applicant is required to pay the sum of \$50 within twenty days of notification of admission, unless he has matriculated previously at Cornell (see p. 12).

Summer Research. A candidate for an advanced degree who has been in residence at Cornell during one regular semester may, on recommendation of his Special Committee and with the approval of the dean at least one week in advance, be permitted to register for an eight-week period of Summer Research under the personal direction of a member of the graduate faculty. Students registered for Summer Research pay one-half of the General Fee for a registration period of not more than eight weeks and the full fee for a longer registration period unless they were regularly registered in the Graduate School during the previous academic year. For those students eligible for and desiring residence credit, a prorated tuition is charged in accordance with the fraction of a residence unit to be earned, based on the tuition in effect for the subsequent academic term.

Noncredit Graduate Registration. To encourage students to continue their studies during the summer period, no tuition or fees are charged for a noncredit graduate registration if the student has been registered during the previous academic year. The student has access to the regular services of the University clinic and infirmary during the summer without charge if he has been registered as a full-time student during one term of the previous academic year and is registered for Summer Research on a noncredit basis. Registration for Summer Research, whether for residence credit or noncredit, is done in the Graduate School Office.

Counseling and Advising Services Ombudsman

The Cornell University ombudsman hears and investigates any complaint brought by any member of the University community concerning any aspect of the operation of the University. When appropriate, the ombudsman directs a complaint to the office which can deal with his problem.

The ombudsman's office, located at 201 Barnes Hall, will be open during the summer. Hours are 9:00 a.m. to 12:00 noon, Monday through Friday.

Office of the Dean of Students

The Office of the Dean of Students, 103 Barnes Hall, has a trained staff available for conferences with students concerning on-campus and off-campus housing; student activities and organizations; selective service

information; and any other matters of personal, educational, and social concern to individual students and student groups.

International Student Office

The International Student Office, 200 Barnes 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.

Housing

University Residence Halls

Accommodations are available in University-operated housing units for graduate and undergraduate men and women registered for the regular six-week Summer Session. More detailed information on housing will be mailed by the office of the Summer Session after admission has been approved. Rooms are furnished with desk, deskchair, desk lamp, bookcase, chest of drawers, bed linens, blankets, and bedspread. Bed linens are laundered by the University and exchanged weekly. Daily room care, including bed-making, is the responsibility of the occupant.

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 they must officially notify the office of the Summer Session of their intent to withdraw.

Students may make application for single or double rooms in University residence halls if they desire. The rates for the six-week Summer Session are \$110 for single occupancy and \$77 for double accommodations. For periods of three weeks or less, the rates are \$20 for single and \$15 for double occupancy per person per week or part of a week. All rates cover cost of room only.

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

Meals are available at various University dining units located conveniently throughout the campus.

Opening and Closing Dates

Living units to be used during the six-week Summer Session will open for occupancy on Tuesday, June 27, and they will close at 2:00 p.m. Saturday, August 12. Earlier or later occupancy will not be possible because of other commitments for use of the residence halls.

Application for Rooms

An application for accommodations in a residence hall must be submitted on an official application form to the Department of Student Housing, 223 Day Hall. 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 will be made in the order of application, with the earliest mailing date about May 15. Since requests for housing from students enrolled in the six-week Summer Session have priority in room assignments, students taking short courses may not receive their assignments until ten days before registration. However, ample housing will be available for all who wish to live in University residence halls.

Advance Payments

A \$20 advance payment is required. A check or money order, drawn to the order of Cornell University, must accompany the room application. *This payment is applied towards the residence charge.* Payments which accompany room applications will be refunded to those students who file written intention to withdraw the application with the Department of Student Housing, 223 Day Hall, by June 15. *The deposit will be forfeited if notice is received after June 15.*

Married Student Housing

Information concerning University accommodations for married students can be obtained by writing the Married Student Housing Office, Hasbrouck Apartments, Pleasant Grove Road, Ithaca, New York 14850. See below for information about off-campus housing accommodations.

Off-Campus Housing

Many of the houses, apartments, and rooms currently available for rent in Ithaca and vicinity are posted in the Department of Student Housing, 223 Day Hall. This office, which functions as a bureau of information only, maintains files of accommodations listed voluntarily by landlords for students and staff members who call at the office. Because the availability of accommodations is constantly changing, it is not possible to compile or mail listings, nor is it feasible to maintain a waiting list of persons seeking accommodations.

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 to \$175 per 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.

Dining Services

Willard Straight Hall and Noyes Lodge offer complete cafeteria and snack bar service, and the North Campus Union features a cafeteria and a delicatessen. Other student dining facilities include the student cafeteria in Statler Hall and the Dairy Bar cafeteria in Stocking Hall. Additional facilities may be available according to need. Meals obtained in these places or in the cafeterias, dining rooms, and restaurants near the campus, will cost approximately \$3.50 to \$4.50 per day.

Health Services

The University student medical services are available to all students officially registered in the Summer Session. Students registered in the regular six-week session are entitled to (1) unlimited visits to the Gannett Medical Clinic, 10 Central Avenue; (2) hospitalization at Tompkins County Hospital with medical care for two days; and (3) emergency surgical care, defined as initial surgical procedures which are necessary for the immediate welfare and safety of the patient.

Students registered in Special Programs are also entitled to (1) unlimited visits to the Clinic for the period of registration; (2) hospitalization based upon length of registration—none if less than three weeks, and, if more than three weeks, graduated up to fourteen days, the maximum based on the entire Summer Session of approximately three months; and (3) emergency surgical care as defined above if the student is registered for more 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: 9:00 a.m.—5:00 p.m.
Saturday: 9:00 a.m.—12:00 noon.
Sunday: 10:00—11:00 a.m.

Physicians are on duty at the above hours except between 12:00 noon and 2:00 p.m. weekdays. Nurses are in attendance at all times during clinic hours.

Should illness or injury occur when the clinic is not open, students should call 272-6962 for instruction. All accidents should be reported to the Safety Division, 256-5211.

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 residence halls these calls should be made by the head resident whenever possible.) Telephone calls for this service should be made through the Gannett Medical Clinic, 256-3493, when the clinic is open (see hours above); to 272-6962 after clinic hours.

This service is not designed to care for students in their rooms. A charge of \$5 in the daytime and \$10 at night is made for such calls.

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, the Regulations for the Maintenance of Public Order, and the Code of Academic Integrity. The regulations and codes are available at Summer Session registration in Barton Hall and from the Office of the Dean of Students, 103 Barnes Hall.

The regulations and 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 residences are responsible for familiarizing themselves with the specific rules applying to their places of residence. They may obtain copies of the rules from head residents and resident advisers.

The responsibility for administration of faculty and University Senate policy with respect to student discipline is exercised by the Office of the Judicial Administrator.

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 operates or parks, or whose vehicle is operated or parked, at any time on the grounds of the University must do the following:

- (1) register the vehicle with the Traffic Bureau at the time of Summer Session registration, or within five days of acquiring a vehicle subject to the registration requirements;
- (2) display, as directed, a registration sticker;
- (3) be legally qualified to operate a motor vehicle in New York State;
- (4) have the vehicle registered in New York State or legally qualified to be operated on the highways of New York State; and
- (5) have the vehicle properly 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 are considered as motor vehicles, and are subject to all rules and regulations governing motor vehicles. Trailers, as family units, are not allowed on any University property. Students may not park on campus from 8:00 a.m. to 5:00 p.m. Monday through Friday and from 8:00 a.m. to 1:00 p.m. on Saturday, except

in certain metered parking areas (Sage Lot, Helen Newman Lot). Parking restrictions are in effect twelve months of the year.

Each student registered for any program during the Summer Session is required to complete the Traffic Bureau IBM card at the time of registration *whether or not he has a vehicle*. This card is kept on file by the Traffic Bureau and Safety Division. The Safety Division office is the only one 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.

University Libraries

The libraries on the Cornell campus are many and varied. They contain more than three and a half million books and provide up-to-date facilities for research and study in countless fields.

The central library at the south end of the Arts Quadrangle, is comprised of two parts. Uris Library, the building with the tower that has become the symbol of Cornell, contains books and periodical collections planned essentially for undergraduates in the liberal arts. A principal aim of the library is to bring students and books as close together as possible. Bookstacks are open to all readers, with only reserve books in heavy demand held in a special category. There are rooms where students, singly and in groups, may use phonographs and tape recording apparatus, and there is a lecture room with sound and projection facilities.

Across the walk from Uris is the John M. Olin Library, devoted more specifically to graduate and faculty scholarship. This closed-stack library houses many special collections of books and manuscripts, among them Rare Books, a collection on the East and Southeast Asia, and another on the history of science, the University Archives, maps, and newspapers.

The two libraries—Uris and Olin—are planned to complement each other in support of the University's program of teaching and scholarship. Besides the central facilities there is an extensive system of libraries which meets the special needs of students enrolled in individual schools, colleges, and departments. Chief among these are the Albert R. Mann Library serving the New York State College of Agriculture and Life Sciences and the New York State College of Human Ecology; the Fine Arts Library serving the College of Architecture, Art, and Planning; and the libraries of the College of Engineering, the New York State Veterinary College, the Graduate School of Business and Public Administration, the Law School, the School of Hotel Administration, and the New York State School of Industrial and Labor Relations.

The privilege of borrowing books for home use is granted to all students who comply with library regu-

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lations. Presentation of the Summer Session Official 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.

Many of the libraries have special copying services, and some publish handbooks and bibliographies that are distributed without charge. A schedule of the hours for all libraries on campus will be available at Summer Session registration desks and in the *Weekly Bulletin*.

The Weekly Bulletin and Calendar

The Summer Session *Weekly Bulletin* is the only campus-wide source of information about events of interest for faculty and students published weekly during the Summer Session.

It contains a calendar of the week's events, official notices, news items, features, and a listing of available services.

The first issue of the *Weekly Bulletin* will be distributed at registration on June 28 in Barton Hall, and thereafter will be distributed on campus during each of the five succeeding weeks of the regular Summer Session.

Copies will be available without charge to anyone at the following places: Summer Session office, B-20 Ives Hall; main desk, Willard Straight Hall; Visitor Information Center, Day Hall; main desk, Statler lobby; Noyes Lodge; Dairy Bar; University dormitories; main desk, North Campus Union; and at Mayer's Smoke Shop, State Street.

Extracurricular Activities

The Summer Session, with the cooperation of various departments and agencies of the University, presents a program of public events and recreation designed to enrich the campus experience of its summer visitors. The Summer Arts Festival is again being presented in addition to the regular program of planned activities. For more information about the Summer Arts Festival, see pp. 59-63.

University Unions

There are three unions at Cornell: Willard Straight Hall, which has served student needs since 1925, the Agnes and Jansen Noyes Center, which was opened in the fall of 1967, and the North Campus Union, which opened in 1971.

Willard Straight Hall serves as a campus gathering point and a center for social, cultural, and recreational activities for all Cornell students. It has facilities for dances, receptions, and other social gatherings; a theatre; a billiard and game room; a browsing library; lounges; a music room; a room for the exhibition of

works of art; a craftshop with lessons in ceramics; a barber shop; and offices and meeting rooms for student organizations. Among the many special services available for students are a central ticket office, a painting and phonograph rental service, and a central reservations service and master calendar of campus activities. The Straight desk is a unique service center where newspapers, magazines, and sundries are sold. Checks up to \$25 may be cashed there. The desk is manned seventeen hours a day, and offers an information service with a long tradition of finding the answer to any question about Cornell. Dining services include a cafeteria, a snack bar (the Ivy Room), a luncheon buffet (the Elmhirst Room), and rooms for private luncheons and dinners.

Noyes Center, like Willard Straight, provides numerous facilities and activities for members of the Cornell community, including a cafeteria, study lounges, meeting rooms, a music listening room, an exercise area, a game room with table tennis and billiards, a television lounge, a pub serving beer and wine, and an information and service desk selling sundries, newspapers, and magazines. Noyes Center is open on a limited basis during the summer.

The North Campus Union is in the new residence hall complex located between Pleasant Grove Road and Triphammer Road. Facilities include a mail center; a pick-up area for laundry, dry cleaning, and shoe repair; a store that sells toilet articles, school supplies, gift items, cards, records, etc.; a crafts studio featuring lessons in weaving, jewelry, metalcraft, leather, macrame, tie-dyeing, etc.; photographic darkrooms; television lounges; a recreation area with billiards and table tennis; a music listening room; browsing lounges; a multipurpose room; meeting rooms and offices for student organizations; music practice rooms; a nursery school; a cafeteria; private dining rooms; and a delicatessen.

The programs and activities available to students for extracurricular recreation and learning through University Unions are of primary importance. They are planned by students, faculty, and staff who are members of the Executive Board of University Unions, or one of the three union building boards, or any of the numerous clubs and committees supported by the union fee. Special staff resources available to work with student groups include a cinema coordinator, a concert coordinator, and special coordinators for Black, graduate, and international activities. General responsibility for determining policies and operating procedures for all three unions is in the hands of students through these boards. These services and activities support the educational objectives of the University and provide opportunities for more meaningful personal relationships among members of the Cornell community, and fulfill the bequest of Willard Straight, who wanted to ". . . make Cornell a more human place."

Membership in University Unions is covered by the General Fee paid by all Summer Session students, and the right is reserved to request appropriate identification from persons who use union facilities. The *University Unions Summer Program Brochure*, avail-

able in any of the three union buildings, contains more detailed information on films, lectures, trips, nature walks, and other summer activities.

Social and Cultural Activities

For those with interests in particular fields, there are more than a hundred organized groups, which include both faculty and students in their membership. Among them are clubs for persons with similar academic interests or similar hobbies, local chapters of professional organizations, and a number of national honorary societies that recognize achievement in scholarship and other fields of endeavor.

Religious Services

Nondenominational services (ecumenical insofar as possible) are held in Sage Chapel during the Summer Session at 11:00 a.m. on six Sundays, July 2–August 6 inclusive. Cornell chaplains and staff supply the pulpit, and the Summer Session Choir is featured each week. The Choir has open membership, and the music is under the direction of the Department of Music. Arrangements for the summer services are the responsibility of the Office for Coordination of University Religious Affairs, Anabel Taylor Hall. Information about other religious services on campus and in Ithaca may be obtained in the *Weekly Bulletin* or by calling 256-4214.

Coordinated Religious Programs

"Freedom for all; domination by none" is the guiding principle under which religious and interreligious affairs have flourished at Cornell since 1869. Organizational structures have altered through the years to keep pace with changing times, the growing complexity of the University, and the need to meet the challenge of succeeding generations in their search for significant and meaningful life. In 1971, new structures emerged, replacing the Cornell United Religious Work (CURW), which came into being in 1929. Three new organizations, all housed in Anabel Taylor Hall, are now operational: The Office for Coordination of University Religious Affairs (OCURA); the Centre for Religion, Ethics, and Social Policy; and the Council of Federated Ministries.

Among the functions of the Office for Coordination of University Religious Affairs (OCURA) are (1) the administration and scheduling of Anabel Taylor Hall for religious and other campus groups; (2) providing an information and referral service concerning religious counselors, programs, projects, and worship services (telephone: 256-4214); (3) serving as liaison between the Centre for Religion, Ethics and Social Policy; the Council of Federated Ministries; and the divisions and departments of the University; and (4) in general, facilitating, coordinating, and interpreting religious affairs at Cornell in cooperation with the University Senate's Subcommittee on Religious Affairs and under the Vice President for Campus Affairs.

The Centre for Religion, Ethics and Social Policy is an independent educational institution, incorporated

under the New York State Education Law and affiliated with Cornell University by formal agreement. It is established to provide continuing opportunities for Cornell students and faculty and other interested persons to deal with questions of public policy as problems of religious belief and moral decision. The Centre operates on the assumption that there are profound religious and ethical issues involved in social policy conflict. It functions to provide the occasions and resources wherein such conflicts can be investigated and critically assessed from religious and ethical perspectives. The Centre expresses its concern through lectures, conferences, seminars, research studies, action projects, and publications.

The Centre is especially concerned with providing opportunities and support for students in initiating and participating in programs of their own design. It encourages the active participation of chaplains and their ministries in its work.

Currently the Centre is sponsoring programs in the following areas: art and religion; alternate communities and life styles; video community education; alternate professions; adversarial research; sex, marriage and the family; and politics and religion.

The Centre operates programs in The Commons, a coffeehouse in Anabel Taylor Hall. These include dramatic productions, poetry readings, video programs, films, and art displays.

The Council of Federated Ministries is organized for the purpose of extending and coordinating the interests and concerns of the religious ministries at Cornell University. At present seventeen denominations and other religious bodies are represented in the Council. While each University ministry is autonomous, developing programs according to the aims, goals, and religious and moral persuasions of its constituents, the Council provides ongoing opportunity for joint programming and interreligious cooperation.

In addition to their leadership in worship, projects, and noncredit course offerings, fifteen full-time and part-time chaplains, as well as several faculty advisers, provide special counseling services to the Cornell community.

Information concerning Summer Session activities of the various ministries may be secured at Anabel Taylor Hall. Also, many of the chaplains are available for counseling during the summer.

Summer Session Choir

Music for the Sage Chapel services is provided by the Summer Session Choir under the direction of Donald R. M. Paterson, University organist. The Choir rehearses in Sage Chapel on Tuesday evenings at 7:15 and on Sunday mornings at 9:30. The first rehearsal will be held on Sunday, July 2. All students and interested persons are invited to participate.

Concerts

The 1972 Summer Session Concert Series, a program of evening concerts by distinguished artists, is pre-

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sented as part of the Summer Arts Festival. For further information, including a listing of the concerts, see p. 59.

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 sponsor lectures of more specialized interest. As a result there are usually four or five lectures on varied topics to choose from in a typical week during the Summer Session period.

Summer Theatre

The summer program of the Department of Theatre Arts is part of the offerings of the Summer Arts Festival. For information on the productions to be presented and courses offered see p. 62.

Art Exhibitions

Andrew Dickson White Museum of Art

Cornell's Museum of Art presents a program of temporary exhibitions in addition to housing the University's permanent art collection.

During the summer of 1972 several loan exhibitions will be featured. Also on view will be selections from the Museum's Asian, contemporary, and graphic arts collections.

In the summer the Museum is open daily, except Monday, from 11:00 a.m. to 4:30 p.m. and on Sunday from 1:00 to 4:30 p.m.

Van Rensselaer Art Gallery

Student work from design courses in the Department of Design and Environmental Analysis is shown during the summer in Van Rensselaer Art Gallery (room 317). Students, faculty, and visitors are cordially invited to visit the exhibition.

Gallery hours are 9:00 a.m. to 5:00 p.m. Monday through Friday.

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 use of Summer Session students.

The gymnasium in Teagle Hall offers facilities to male students for basketball, volleyball, and general workouts Monday through Friday from 9:00 a.m. to 5:00 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 1:00 to 5:00 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. 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 from 12:00 noon to 1:30 p.m. and for coed swimming from 1:35 to 3:00 p.m. Students will be admitted and a towel may be obtained upon presentation of the official Summer Session Registration Certificate.

Women students may use the Helen Newman pool from 1:00 to 5:00 p.m. Monday through Friday. Towels and suits are provided, but students must furnish their own bathing caps. From 2:00 to 4:00 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 call 256-4286.

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, 256-3653 or 272-8303, or Gwen Ritchie at Helen Newman Hall, 256-5133.

Golf: Hours and instructor in charge to be announced. Call Mr. George Hall at the University Golf Course, 256-3361.

Swimming: Hours to be arranged. At Teagle Hall call 256-4065. At Helen Newman Hall call Miss Carol Joy, 256-5133.

Sports-Fitness School for Boys

Boys, seven to fourteen 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 26 and ending July 28 on the University athletic fields and at Teagle pool. A fee will be charged. Applications may be obtained at the Physical Education Office in Teagle Hall. Call 256-4286 for further information.

Summer-Ithaca

A nonprofit community organization staffed by volunteers and beginning its twelfth year of service to the community, Summer-Ithaca seeks to encourage the performing and visual arts for 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 and the Ithaca Chamber

of Commerce. Cornell University cooperates in developing this program of events. The scope of activities includes theatre, concerts, lectures, films, exhibitions, 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. John E. Murphy, 273-2331.

Schedule of Courses

Course offerings of the Summer Session are organized and described on the following pages under three classifications: the six-week Summer Session, Special Programs, and the Summer Arts Festival, 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 dean reserves the right to cancel any course for which, through unforeseen circumstances, satisfactory instruction cannot be provided.

U and G. The letter U following a course title indicates that the course carries undergraduate credit; the letter G designates graduate-level courses. See p. 8.

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. For further information on unit courses, see p. 11.

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 regular Summer 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 six-week session will be held on Thursday, August 10, and Friday, August 11, at the hours indicated by the following schedule. The usual classrooms will be used unless a change is announced by the instructor.

8:00 a.m. classes, Thursday at 8:00 a.m.
 9:00 and 9:30 a.m. classes, Friday at 8:00 a.m.
 10:00 a.m. classes, Thursday at 10:30 a.m.
 11:00 and 11:30 a.m. classes, Thursday at 2:00 p.m.
 12:00, 12:30, and 1:00 p.m. classes, Friday at 10:30 a.m.
 1:40 and 2:00 p.m. classes, Friday at 2:00 p.m.

For all unit courses in the regular Summer Session, the final examinations will be on Friday.

Deviations from the schedule 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.



SPACE SCIENCES BUILDING
CENTER FOR RADIOPHYSICS
AND
SPACE RESEARCH

Summer Session Courses

June 28–August 11

Students admitted to this session may elect a course from among the Special Programs, and the Summer Arts Festival (pp. 59–63) 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 for the regular Summer Session.

Africana Studies

ASRC 321 The History of Afro-American Literature (U,G)

Four hours credit. M T W Th F 11–12:15. 310 Trip-hammer Road. Mr. C. Everett.

The intent of this course is to take a new and more creative approach to how literature developed among Black Americans. This literature will be studied in context with the history of African people in this country. The seminar nature of this course will permit the students to examine and study the origin and growth of Afro-American literature from a historical perspective. This approach to the study of Black literature is intended to show new dimensions in the total life of African people in this country.

ASRC 361 Africans in the Making of the New World (U,G)

Three hours credit. M T W Th F 12:30–1:45. 310 Trip-hammer Road. Mr. Mutunhu.

The intent of this course is to examine, in detail, the role that the people of African descent have played in the making of the nations called the New World. Considerable time will be used to show that all the Africans who were brought to the New World were not slaves. In fact, some were explorers, paid sailors and soldiers, freebooters, and skilled craftsmen.

Agricultural and Occupational Education

See pp. 45–46.

Agricultural Economics

See p. 46.

Agricultural Engineering

See p. 46.

Animal Science

See p. 46.

Anthropology

Anthro. 101 Introduction to Cultural Anthropology (U,G)

Three hours credit. M T W Th F 9:30–10:45. Rand 314. Mr. Piker.

A comparative study of the organization of cultural behavior in systems of communications, technology, social relations, ritual, ideas, and sentiments; the relation of such systems to personal behavior and to continuity, change, and cultural transfer in history. Illustrative materials drawn largely from non-Western societies.

Anthro. 102 The Evolution of Man (U,G)

Three hours credit. M T W Th F 8–9:15. Rand 314. Mr. Stini.

A survey of the processes and history of man's evolution. The mechanisms of evolutionary change and adaptation to the environment are examined from the standpoint of both archaeology and human biology. The presentation of material from both disciplines makes possible a documentation of the evidence of the progress of evolutionary change at both the organic and cultural levels. In addition, aspects of ongoing evolution of living populations are discussed with emphasis on the long-term interaction of biological and cultural factors.

Anthro. 221 The Biology of Man (U,G)

Three hours credit. M T W Th F 11–12:15. McGraw 303. Mr. Stini.

A survey of important biological characteristics of the human species. Considerable emphasis will be given to human growth and development and the effects of the environmental factors on the phenotypic expression of genetic traits. The interaction of various

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human populations and their environments as seen in disease and nutritional stress will be discussed with reference to actual case-study material.

Anthro. 305 Psychological Anthropology (U,G)

Three hours credit. M T W Th F 12:30-1:45. McGraw 305. Mr. Piker.

This course will deal with the interplay between cultural and psychological phenomena as dealt with by anthropologists. The contributions of Freud and other theorists will be examined and applied to non-Western peoples.

Architecture

See pp. 46-47.

Art

See History of Art, p. 34; Studios in Art, p. 62; Female Studies (course 350), p. 33 and Psychology (course 305), p. 42.

Biological Sciences

***Bio. Sci. 1012 General Biology (U)**

Six hours credit. Lectures, M T W Th F 9:30-11:50.

Malott 405. 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, or in closely related subject areas. Plant and animal materials are considered together rather than in separate units. This course covers cellular biology; the biochemistry of metabolism; physiology; anatomy; behavior; 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 firsthand experience with the materials discussed in lecture. Fee, \$25.

***Bio. Sci. 106 Interactive Computing for Science Students (U,G)**

One hour credit. Lectures, F, 1-2. Ives 112. Laboratory work to be arranged. Mr. Howland.

An introduction to computing using the interactive language FOCAL with a discussion of other algebraic computing languages, such as BASIC and elementary FORTRAN. Students will be issued tickets for five hours of computing time at the Division of Biological Sciences Interactive Computing Facility. Applications to problems in the sciences will be emphasized. Fee, \$10.

Bio. Sci. 131 Introductory General Biochemistry, Lectures (U)

Six hours credit. Prerequisite: one unit of high school chemistry. One unit of high school biology not required but highly desirable. M T W Th F 8-10. Reports and discussion periods to be arranged. Riley-Robb 15. Mr. Neal.

Designed for students interested in the biological sciences who wish to obtain a biochemical foundation for further studies in this field. The fundamental principles of general, organic, and biological chemistry are presented with emphasis on chemical processes that occur in living organisms. Selected topics are discussed in a manner which gives a comprehensive introduction to the principles involved. Biologically active compounds are used extensively to illustrate basic organic reactions which, in turn, serve as a specific introduction to biochemical topics including the degradation and synthesis of biologically active compounds and their interrelationships. The level of the course is indicated by the text, *Chemistry and Biochemistry, A Comprehensive Introduction*, by A. Leslie Neal, McGraw-Hill Book Company, 1971.

Bio. Sci. 361 General Ecology (U,G)

Three hours credit. Prerequisites: Biol. Sci. 101-102 or 103-104 or equivalent. Lectures M T W Th F 11-12:15. Fernow 210. Afternoon field trips to be arranged.

Principles concerning the interactions between organisms and their environment. Influence of competition, social behavior, predation, and other factors on population size and dispersion. Role of energy flow and mineral cycling in determining the structure and productivity of ecosystems. Succession and classification of natural communities. Influence of climate and past events on the diversity and stability of communities in different regions of the world. Interspecific competition and the niche concept. Chemical interactions between organisms. Application of ecological principles to human problems. Modern evolutionary theory will be stressed throughout and attention given to conflicting ecological hypotheses.

Bio. Sci. 431 Principles of Biochemistry, Lectures (U,G)

Four hours credit. Prerequisite: elementary organic chemistry (Chem. 353) or the equivalent. M T W Th F 8-10. Riley-Robb 105. Miss Griffiths.

A basic course dealing with the chemistry of biological substances and their transformations in living organisms. The major areas of biochemistry will be covered comprehensively. This course, designed for advanced undergraduates and graduate students, is appropriate as a terminal course as well as serving as a prerequisite for the intermediate and advanced courses in biochemistry that are offered during the academic year.

Bio. Sci. 472 Ornithology (U,G)

Four hours credit. Prerequisite: basic course in biology or zoology. Lectures M W F 8-9:15. Laboratory M W F 2-4:30, substituting some morning field trips, 5:30-8, and two weekend trips. Bradfield 105. Mr. Tate. Introduction to the biology of birds, including the unique features of avian anatomy and physiology, classification, evolution, distribution, ecology, and behavior. Emphasis on nesting, reproduction, and growth will be made to correspond to the field season. Laboratory will include external and internal morphology, molts, and plumages. Identification of birds of New York State and bird families of the world made from study skins. Demonstration laboratories will include

bird photography and sound recording as research tools. Many local field trips and two weekend trips to outstanding bird concentrations. See also Ornithology Field Seminar for Adults and Family Groups, p. 54.

Biology of the Honey Bee

See Entomology 262, p. 33.

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 28 to July 21.* Prerequisite: at least two units of mathematics, and one unit or more of secondary school chemistry. Registration permitted only to students who register for Chem. 108u. Lectures, M T W Th F 8-9:50. Recitations, T W Th 3:30-4:30. Lectures and recitations in Baker Laboratory 135. Laboratory M T W Th F 10-1. Baker Laboratory 101.

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 24 to August 11.* Prerequisite: Chem. 107u or its equivalent. Lectures M T W Th F 8-9:50. Recitations, T W Th 3:30-4:30. Lectures and recitations in Baker Laboratory 135. Laboratory M T W Th F 10-1. Baker Laboratory 101.

This course is a continuation of Chem. 107u and serves as prerequisite for Chem. 236 or 353. The laboratory includes a simplified scheme of qualitative analysis. Texts: as listed above for Chem. 107u. Fee, \$7.50.

***Chem. 107 General Chemistry (U)**

Three hours credit. Prerequisite: high school chemistry and two units of mathematics. Recommended for those students who will take further courses in science. Lectures, M T W Th F 11-12:15. Recitations, two one-hour sessions a week, to be arranged. Lectures and recitations in Baker Laboratory 335. Laboratory M W F 2-4, Baker Laboratory 101.

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. This course is an option of the Pre-Engineering Program for Talented High School Juniors, p. 48.

Chem. 353 Elementary Organic Chemistry (U,G)

Four hours credit. Prerequisite: Chem. 104 with a grade of at least C-, or 108, or 116, or their equivalent. Chem. 355 must be taken concurrently. 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. Baker Laboratory 119.

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 stressed. Text: *Organic Chemistry*, Morrison and Boyd.

***Chem. 355 Elementary Organic Laboratory (U,G)**

Two hours credit. Must be taken with Chem. 353. Laboratory, M T W Th F 10-1. Baker Laboratory 201. Laboratory experiments on the preparation and reactions of typical aliphatic and aromatic compounds. Text: *Laboratory Experiments in Organic Chemistry*, Adams, Johnson, and Wilcox, 6th ed. Fee, \$15.

Classics

Greek

Greek 101u Greek for Beginners (U)

Three hours credit. *June 28 to July 21.* Must be taken with Greek 103u. M T W Th F 8-9:15 and 11-12:15. Goldwin Smith 120A.

Introduction to Attic Greek. Designed to enable the student to read the ancient authors as soon as possible.

Greek 103u Attic Greek (U)

Three hours credit. *July 24 to August 11.* Open only to students registered in Greek 101u. Same time schedule as Greek 101u. Readings from Plato.

Latin

Latin 105u Latin for Beginners (U)

Three hours credit. *June 28 to July 21.* Must be taken with Latin 106u. M T W Th F 8-9:15 and 11-12:15. Goldwin Smith 120.

An introductory course in the essentials of the Latin language, designed for rapid progress toward reading the principal Latin authors.

Latin 106u Latin for Beginners (U)

Three hours credit. *July 24 to August 11.* Open only to persons registered in Latin 105u. Same time schedule as Latin 105u. Selected readings.

See pp. 38-39 for listings under Department of Modern Languages and Linguistics.

Community Service Education

CSE 500 Special Problems for Graduate Students (G)

Credit and hours to be arranged. S-U grades optional. Department faculty.

For graduate students recommended by their chairman and approved by the head of the department and the instructor in charge for independent advanced work.

CSE 599 Master's Thesis and Research (G)

Credit and hours to be arranged. S-U grades optional.

Registration with permission of the instructor and chairman of the graduate committee. Department graduate staff.

CSE 699 Doctoral Thesis and Research (G)
Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of the graduate committee. Department graduate staff.

CSE 527u Working with the Aging
See p. 52.

CSE 531u Understanding and Treating Drug Abuse
See p. 52.

CSE 591u Building Evaluation into Adult Education Programming
See p. 52.

Comparative Literature

Comp. Lit. 102 The Art of Narrative (U)
Three hours credit. Registration limited to 20 students. M T W Th F 9:30-10:45. Goldwin Smith 183. Mr. Pedersen. In a reading and discussion of texts by Austen, Conrad, Faulkner, Gogol, Mann, Nabokov, and others, this course will attempt to cover a variety of possibilities and problems involved in narrative writing. Questions of material and conventions, composition and style, point of view and narrative attitudes will be examined to illustrate the process of structuration which finally generates a specific text out of the general field of narrative.

Comp. Lit. 103 Varieties of the Imagination in Literature (U)
Three hours credit. Registration limited to 20 students. M T W Th F 11-12:15. Goldwin Smith 183. Mr. Pedersen. Discussion of a series of dramatic and narrative works starting with the most "realistic" and moving towards various grotesque, ironic, fantastic, and romantic forms. Such a progression raises the questions of literary reality, i.e., what constitutes a writer's world, and of the uses and functions of the imagination as the faculty which integrates and transforms ordinary language and reality into a literary structure. Readings will include works by Ibsen, Joyce, Kafka, Miller, Shakespeare, Tolkien, and Tolstoy.

Comp. Lit. 201 The Reshaping of Tradition in European Literature (U,G)
Three hours credit. Registration limited to 20 students. M T W Th F 12:30-1:45. Goldwin Smith 183. Mr. W. J. Kennedy. Study and discussion of the telling and retelling of landmark motifs in selected great books of the Western tradition. The focus will be on the comparison of ancient classics with modern masterpieces that take their departure from similar themes. The readings will include Aeschylus, *Oresteia*, and Sartre, *The Flies*; Sophocles, *Oedipus* plays, and Anouilh, *Antigone*; Homer, *Odyssey*, and Faulkner, *As I Lay Dying*; Ovid, *Metamorphoses*, and Kafka, *Metamorphosis*.

The History of Afro-American Literature
See ASRC 321, p. 23.

Computer Science

***Comp. Sci. 202 Computers and Programming (U,G)**
Three hours credit. Some programming experience in an algebraic language highly desirable but not required. M T W Th F 12:30-1:45. Upson 351. Mr. Muchnick. This is intended as a foundations course in computer programming. Algorithms and their relation to computers and programs. Analysis of algorithms in terms of space and time requirements. A procedure-oriented language; specification of syntax and semantics, data types and structures, statement types, input-output, program structure. A brief introduction to machine organization. Programming and debugging problems on a computer are essential parts of the course. Fee, \$20.

***Comp. Sci. 311 Introduction to Computer Programming (U,G)**
Three hours credit. No prerequisites, but must have high mathematical aptitude. M T W Th F 12:30-1:45. Upson 330. Mrs. Bergmark. The purpose of this course is to teach the student how to program a digital computer in a higher level language (PL/I). The course will concentrate on the analyses of numerical and nonnumerical problems, formulation of these problems for automatic computation, construction of PL/I algorithms which describe the computations, and their execution on the computer. This course will not deal explicitly with computer organization nor with machine language programming. For these topics see Computer Science 202. Fee, \$20.

Interactive Computing for Science Students
See Bio. Sci. 106, p. 24.

Consumer Economics and Public Policy

CEPP 500 Special Problems for Graduate Students (G)
Credit and hours to be arranged. S-U grades optional. For graduate students recommended by their chairman and approved by the head of the department and the instructor in charge for independent, advanced work. Department faculty.

CEPP 599 Master's Thesis and Research (G)
Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department graduate faculty.

CEPP 699 Doctoral Thesis and Research (G)
Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department graduate faculty.

CEPP 443u Social and Economic Effects of the Residential Environment

See p. 52.

CEPP 535u Consumer in the Market

See p. 52.

Design and Environmental Analysis**Form Study: Materials**

See DEA 440u, p. 53.

Science in the Near Environment for Consumers

See DEA 530u, p. 53.

Economics**Econ. 101 Introductory Economics (U)**

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

Concentration on the determinants of aggregate economic activity. 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 Introductory Economics (U)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith 160. Mrs. Gosse.

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 9:30-10:45. Goldwin Smith 120A. Mr. Kats. Seminar will be offered in mathematical economics.

Econ. 311 Intermediate Microeconomic Theory (U,G)

Four hours credit. Prerequisite: Econ. 102 or its equivalent. M T W Th F 11-12:15. Goldwin Smith 277. Mr. Kats.

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 distributions of national income.

Econ. 312 Intermediate Macroeconomic Analysis (U,G)

Four hours credit. Prerequisite: Econ. 101 or its equivalent. M T W Th F 9:30-10:45. Goldwin Smith 277. Mr. Singh.

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 analyses.

Econ. 362 International Monetary Theory and Policy (U,G)

Four hours credit. Prerequisite: Econ. 101-102 or consent of the instructor. M T W Th F 9:30-10:45. Goldwin Smith 242. Mr. Linn.

The evolution of the international monetary system and an analysis of the present difficulties, focusing among other problems on the following: alternative exchange rate regimes, international reserves, gold, the Euro-Dollar Market, and international capital flows. The emphasis will be put on evolution of empirical evidence and questions of policy.

Econ. 372 Processes of Economic Growth and Development (U,G)

Four hours credit. Prerequisite: Econ. 101-102 or consent of the instructor. M T W Th F 11-12:15. Goldwin Smith 160. Mr. Singh.

A consideration of various contributions by economists and others to an understanding of how societies undergo economic growth and institutional change. Developing countries are the main focus of attention. Some possibilities of combining elements from economics and other fields to form a broad approach to economic development are explored.

Economics and Social Statistics

See ILR 510, p. 35.

Education

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

Courses designated with a *u* after the course number are of three weeks' duration. Since the normal course load is six credit hours for the six-week session, combinations of courses which significantly increase this limitation cannot be approved. Therefore, it is not possible to register for two 3-credit hour courses offered in the same three-week period. Two unit courses offered in successive periods, or one 3-credit unit course plus a 3-credit course in the six-week session will be approved.**Ed. 417 Psychology of Adolescence (U,G)**

Three hours credit. Prerequisite: an introductory course in psychology or its equivalent. M T W Th F 9:30-10:45. Warren 101. Mr. Woodsworth.

A survey of the nature of adolescent growth and development with emphasis on some of the causal factors pertaining to education of adolescents. May be applied toward certification of secondary school teachers and guidance counselors.

Ed. 470 Educational Issues (U,G)

Three hours credit. M T W Th F 9:30-10:45. Warren 201. Mr. Posner.

A critical examination of theories, policies, and practices.

Ed. 473 Contemporary Philosophy of Education (U,G)

Three hours credit. M T W Th F 11-12:15. Warren 201.



A study of recent works of philosophers on educational topics.

Ed. 499 Informal Study in Education (U,G)

Maximum credit, three hours. Members of staff. The privilege of informal study is granted to a qualified junior, senior, or graduate student, when approved by an adviser from the Department of 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. 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. Members of the staff.

Ed. 511 Educational Psychology (U,G)

Three hours credit. Prerequisite: an introductory course in psychology, or its equivalent. M T W Th F 11-12:15. Warren 101. Mr. Woodsworth. 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. 8-9:15. Warren 361. Mr. Posner. A survey of the basic elements involved in making curriculum decisions, and an examination of contemporary curriculum developments in elementary and secondary schools.

Ed. 546u Teaching Reading and Language Skills (U,G)

Three hours credit. *June 28 to July 21*. M T W Th F 9:30-12. Warren 361. Mr. Berg. Emphasis will be on teaching reading to the disadvantaged, including a critical study of cultural and personal differences that relate to methods of reading instruction. Theories of causation of reading difficulties, including techniques and procedures of diagnosis at both the elementary and secondary level, will be investigated. Theories of instruction will be studied, and techniques and methods of instruction will be reviewed as they relate to the different or disadvantaged student.

Ed. 548u Improvement of Reading Instruction (U,G)

Three hours credit. *July 24 to August 11*. M T W Th F 9:30-12:00. Warren 361. Mr. Berg. Focus will be on the public school reading supervisor's role, selecting and budgeting materials, organizing and operating special clinical facilities, and planning and coordinating remedial programs in reading. The role of corporations in the educational arena, including those related to educational accountability, will be studied. Developing differential programming

for multivariate cultural groups and methods for evaluating the program will be studied. Programs with industry will also be reviewed, as will programs at the college and university level.

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. Barnes 203. 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. 569u Personnel Administration (U,G)

Three hours credit. *June 28 to July 21*. M T W Th F 9:30-12. Warren 260. Mrs. Egner. Designed to provide an introduction to modern psychological and sociological perspectives of personnel administration. Two purposes are paramount: (1) to acquaint the student with a variety of ways of conceiving the problems of personnel administration, and (2) to acquaint the student with relevant research.

Ed. 585 Occupational and Educational Information (G)

Four hours credit. M T W Th F 9:30-10:20. Laboratory T Th 2-4:15. Caldwell 250A. Mr. Lewin. Survey and appraisal of occupations and training opportunities. Study of sources of educational and vocational information, job analysis, vocational trends. Field trips to places of employment.

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

Two hours credit. *June 28 to July 21*. Prerequisite: provisional certification in guidance. M T W Th F 12:30-2:10. 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. *June 28 to July 21*. Prerequisite: a course in psychological testing. M T W Th F 10-11:40. 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.

Ed. 588u Case Studies in Counseling (G)

Two hours credit. *June 28 to July 21*. Prerequisites: Ed. 555, 582, 583, and 585, or their equivalents. M T W Th F 8-9:40. East Roberts 223. An advanced course in counseling in which cases are used for illustrative purposes. Preparation for and conducting of counseling interviews; the making of

case studies; referral and other procedures. Required for permanent certification in guidance in New York State.

Ed. 589u Affective Education (G)

Two hours credit. *June 28 to July 21*. Enrollment limited to 36 students. M T W Th F 10–11:40. Warren 160. Mr. Hedlund.

Affective education is the developing curriculum area designed to teach the student skills for understanding and guiding his own personal development. This course will utilize an experienced-based, participatory design to develop basic interpersonal and small group skills, and to introduce a conceptual framework for the design, application, and evaluation of humanistic education techniques and courses. The course is appropriate for counselors, teachers, and administrators concerned with the development of psychological education offerings in the school or college. Meets New York State permanent certification requirement for counselors, optional courses category.

Ed. 586u, 587u, 588u, and 589u constitute the Unit Courses in Guidance. For information on this program, see p. 50.

Ed. 668u Seminar in Educational Administration (U,G)

Three hours credit. *July 24 to August 11*. M T W Th F 9:30–12:00. East Roberts 223. Messrs. Haller and Hixon.

Consideration of problems and policy questions involving the administration of public schools and colleges. In-depth study will be made of issues involving concepts of administration and administrators, techniques of program management and evaluation, staff and student interaction, and legal and economic influences.

Ed. 670 Seminar in the College and University (U,G)

Three hours credit. M T W Th F 9:30–10:45. Warren 261. Mrs. Moore. Conditions of disciplined inquiry in higher education.

Ed. 433u Special Problems, Leadership in Occupational Youth Organizations (U,G)

See p. 46.

Ed. 527u Building Evaluation into Adult Education Programming (U,G)

See p. 52. Also listed as CSE 591u.

Ed. 532u Methods and Materials of Teaching Agricultural and Occupational Education (U,G)

See p. 46.

Collective Bargaining in Public Education

See ILR 607, p. 37.

Special Programs of Interest to Teachers

Agricultural and Occupational Summer Program, p. 45.

Institute in Deterministic Methods in Operations Research, p. 47.

Unit Courses in Guidance, p. 50.

Human Ecology Unit Courses, p. 51.
Summer Institute in Social Demography and Population Policy, p. 56.
Teachers' Environmental Conservation Workshop, p. 57.

Engineering

Civil and Environmental Engineering

C & EE 2605 Law and Environmental Control (G)

Three hours credit. Prerequisite: permission of the instructor. Designed for seniors and graduate students. M T W Th F 11–12:15. Mr. Bereano.

An introduction to the structure and operation of the legal system and an investigation of the manner in which that system may handle environmental problems. Topics to be considered include interaction of law and science; regional problems and political jurisdictional boundaries; the police power of the states; statutory law and case law; the judicial function; the nature and functions of administrative agencies; environmental regulation; recent environmental case law; the interstate compact.

Computer Science

See pp. 26, 49.

Electrical Engineering

Elec. Eng. 4210 Introduction to Electrical Systems (U)

Three hours credit. Prerequisites: Math. 192 and Physics 112 or their equivalents. Lecture-recitations, M T W Th F 9:30–10:45. Phillips 320.

A core-science course intended to develop competence in several analysis skills appropriate to the field of electrical engineering and to impart understanding of the physical basis for the concepts associated with the skills. Topics include: electrical circuit elements (resistors, capacitors, inductors, independent sources, and branch relationships); time functions and their representation (real exponentials, complex numbers, trigonometric functions, and complex exponentials); response of simple networks and the impedance concept (natural response, forced response to periodic excitation, and pole-zero concepts); circuit equations and methods of solution (branch equations, Kirchhoff's laws, nodal and mesh equations, matrix methods of solution, and Norton and Thevenin equivalents); controlled sources and modelling of devices (representation of idealized electronic and electro-mechanical devices).

Engineering Cooperative Program Summer Term

See p. 48.

Engineering Short Courses

See p. 49.

Industrial Engineering and Operations Research

OR 9160 Introductory Engineering Probability (U)

Three hours credit. Prerequisite: Math. 112 or 122 or 192. M T W Th F 9:30–10:45.

At the end of this course a student should have a working knowledge of some of the basic tools in probability theory and their use in engineering. This course may be the last course in probability for some students or it may be followed by a course in statistics. The topics include: a definition of probability; basic rules for calculating with probabilities when the number of possible outcomes is finite; discrete and continuous random variables; probability distribution and density functions; expected values, jointly distributed random variables, and marginal and conditional distributions; special distributions important in engineering work; the normal, exponential, binomial, and other distributions, and how they arise in practice; and Markov chains and applications.

The courses listed below are part of the Institute in Deterministic Methods in Operations Research, see p. 47.

OR 9530 Mathematics Programming I (G)

Three hours credit. *June 26 to August 4.* Time and place of class meetings to be arranged. Mr. Nemhauser.

The geometry and duality of linear programming. Complete regularization and the resolution of degeneracy. Adjacent extreme-point methods such as the simplex, dual, and multipage in linear and nonlinear problems. Models of transportation and network type, and zero-sum and two-person games. Mixing routines and decomposition. Introduction to integer programming. Convex programming and Kuhn-Tucker theory.

OR 9535 Game Theory (G)

Three hours credit. *June 26 to August 4.* Time and place of class meetings to be arranged. Messrs. Lucas and Billera.

Two-person zero-sum games: the minimax theorem, relationship to linear programming. Two-person general-sum games. Noncooperative n-person games; Nash equilibrium points. Cooperative n-person games: the core, stable sets, Shapley value, bargaining set, kernel, nucleolus. Games without side payments. Games with infinite numbers of players. Economic market games.

Mechanical Engineering

Mech. Eng. 3020 Technology and Society— an Historical Perspective (U)

Three hours credit. M T W Th F 11–12:15. Upson 215. Mr. Conta.

An introduction to the history of technology and its relationship to society. Emphasis will be upon the interactions between technology and the corresponding economic, social, and political developments of the period, rather than upon the internal history of technology. The period of major interest will be the nineteenth and twentieth centuries. Both the material abundance and the explosive problems of the twen-

tieth century had their origins in two dramatic developments of the nineteenth century. One was the emergence of the Watt steam engine as a general purpose prime-mover and the vast increase in available power it made possible by the exploitation of the thermal energy of wood and the fossil fuels. A second, and less obvious, development was a change in the technological motivation. Technology changed from a response to the needs of man (necessity as the mother of invention) to a response to the possibilities of science (invention as the mother of necessity—the technological imperative).

See also Math. 192, *Calculus for Engineers*, p. 37, and Math. 294, *Engineering Mathematics*, p. 37.

English

Engl. 135 Writing about Experience (U)

Three hours credit. Open to freshmen and sophomores. M T W Th F 8–9:15. Goldwin Smith 26. Mr. McMillin. Designed primarily to give the student practice in writing about his own experience, either in the present—here at Cornell—or in the past. Most of the class time will be given to the student's own work. A Freshman Humanities course.

Engl. 157 American Fiction and Culture (U)

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

Nineteenth-century novels which comment on emerging patterns of American manners and morals. Hawthorne, James, Howells, and Twain are central, and various other writers are included at the option of the instructor. A Freshman Humanities course.

Engl. 159 Politics, Language and Literature (U)

Three hours credit. M T W Th F 8–9:15. Goldwin Smith 236. Mr. Kaufman.

A study of the language and rhetoric occasioned by political events, past and present. Writings of different kinds and intentions (from the *New York Times* to the works of Whitman, Yeats, Orwell, and Hemingway) will be read and analyzed. A Freshman Humanities course.

Engl. 251 Major English Writers (U)

Four hours credit. M T W Th F 1:30–2:45. Goldwin Smith 246. Mr. Budick.

Studies in selected works of major English writers from Chaucer to the seventeenth century, with some consideration of the English literary tradition. Prerequisite to the English major.

Engl. 252 Major English Writers (U)

Four hours credit. M T W Th F 1:30–2:45. Goldwin Smith 248. Mr. Marcus.

Studies in selected works of major English writers from the seventeenth to the nineteenth centuries, with some consideration of the English literary tradition. Prerequisite to the English major.

Engl. 303 Creative Writing Workshop: Explorations (U,G)

Four hours credit. M T W Th F 9:30–10:45. Goldwin Smith 246. Mr. Parrish.

A workshop for the development of talent and skills

in the art forms of writing. Explorations for the bases of literary aesthetics. Practice in writing poetry, prose fiction, and allied kinds of writing. Participants will submit their own work for analysis in group discussion and in conference.

This course is a component of the Summer Arts Festival. See p. 59.

Engl. 317 The Romantic Poets (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 248. Mr. Parrish.

The nature of Romanticism, arrived at through close reading of the poetry of Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats.

Engl. 328 The American Renaissance (U,G)

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

America's literary maturity in the 1830s, 40s, and 50s. The themes of selfhood and community in the inter-related masterpieces of Emerson, Thoreau, Hawthorne, Melville, Whitman, and Dickinson.

Engl. 346 Modern Drama (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 227. Mr. McMillin.

A study of drama from Ibsen to the present day, with special attention to Shaw, Ibsen, Brecht, and O'Neill.

Engl. 354 Science Fiction (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 124. Mr. Panshin.

A study of modern science fiction novels and short stories with an emphasis on the range and the potential of the genre. Among the authors studied will be Heinlein, Asimov, Clarke, and Zelazny.

Engl. 364 Modern American Poetry (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 26. Mr. Wetherbee.

The emergence and development of new poetic idioms and subjects in the work of Robinson, Frost, Pound, Williams, Eliot, Stevens, and others. Whitman, Dickinson, and other ancestors; foreign influences and native intonations; traditional and innovative prosody; modernism in painting, music, and poetry; black and female voices; and other topics.

Engl. 365 Chaucer (U,G)

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

The course will center on Chaucer's literary artistry in *Troilus and Criseyde* and *The Canterbury Tales*, with some attention to the minor poems. No previous work in Middle English required.

Engl. 368 Character, Identity, and Society in Shakespearean Drama (U,G)

Six hours credit. M T W Th F 9:30-12:15. Goldwin Smith 234. Mr. Fogel.

An intensive course which will constitute a full Summer Session academic program. No other courses can be taken.

A study of Shakespeare's dramatic and theatrical art in several of his great comedies and tragedies: *Twelfth Night*, *As You Like It*, *King Lear*, *Julius Caesar*, *Anthony and Cleopatra*, and *Coriolanus*. Special em-

phasis on the problems of Shakespeare's men and women as they define themselves in relation to a changing social and political order; the crisis in society and the crisis in the individual. The plays studied include those to be produced in the summer at the Shakespeare Festival Theatres in Stratford, Ontario, and Stratford, Connecticut. The class will visit one or, if at all possible, both of these theatres during the Summer Session.

The following courses, English 385, 387, and 389, are components of the Summer Arts Festival. See pp. 59-61.

Engl. 385 Advanced Fiction Workshop (U,G)

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

A workshop for writers of narrative, of short stories, novels, and allied forms, who are in need of development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference.

Engl. 387 Advanced Poetry Workshop (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 248. Mr. Morgan.

A workshop for poets in need of development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference.

Engl. 389 Playwriting (U,G)

Four hours credit. M T W Th F 3-4:15. Goldwin Smith 246. Mr. Parker.

A workshop to consist of analyses of selected model plays, exercises in play-making, and the reading and criticism of student work. Students need not have any experience in playwriting, but they should have some familiarity with dramatic literature.

Engl. 417 Seventeenth-Century Poetry (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 162. Mr. Budick.

Careful study of major short poems by Shakespeare, Ben Jonson, Donne, Herbert, Marvell, Milton, and others.

Engl. 461 Studies in Modern American Literature (U,G)

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

The discovery of a distinctive "modern" predicament, in two analogous literary moments: Howells, Twain, Adams, and James in the 1880s; and Wharton, Hemingway, Fitzgerald, and Faulkner in the 1920s.

Engl. 466 Studies in Modern Fiction (U,G)

Four hours credit. T M W Th F 11-12:15. Goldwin Smith 227. Mr. Marcus.

Topics to be explored include experiments in form; the decline of faith in the efficacy of language; and political and social themes such as the role of women, and the tension between the artist and his society. Readings from such authors as Hardy, Joyce, Lawrence, Woolf, Beckett, and Nabokov.

English as a Second Language

See p. 39.

Entomology

*Ent. 262 Biology of the Honey Bee (U,G)

One hour credit. Prerequisite: first-year biology course (Biol. Sci. 103-104). Limited to 10 students. Fifteen laboratories, two per week, plus three evening sessions to be scheduled. Caldwell Hall 225 and Dyce 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 are presented. Fee, \$6.

Field Ecology

See p. 49.

Female Studies

The Female Studies Program at Cornell is one of the few academic units in the country devoted to research and teaching about women. This interdisciplinary program, which began in the fall of 1970, now offers or sponsors courses which present a feminist perspective on literature, psychology, history, economics, education, human development, and sociology.

The Female Studies Program has developed a great deal since its inception in 1970 and this year, for the first time, is offering a program as part of the Cornell Summer Session.

In addition to the courses listed below, the following two courses may be offered: Women in Communist China and The Economic History of Women.

For further information about the program or the courses write, Female Studies, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Fem. St. 220 The Psychology of Woman (U,G) (Also Psych. 282)

Three hours credit. Limited to 30 students. M T W Th F 2-3:15. Goldwin Smith 26. Ms. Graetz and guest speakers.

A discussion of women and their relationship to the development of psychological concepts. The failure of traditional psychology to offer an adequate basis for the understanding of women will be addressed in an attempt to articulate more valid bases for a psychology of Woman. Works of Sigmund Freud, Karen Horney, Erik Erikson, Wolfgang Lederer, Friedrich Engels, Margaret Mead, as well as contemporary feminist writers, will be examined critically. The course will include discussion sections in which students will have a chance to relate course material to their own life experiences.

Fem. St. 350 Visual Images of the Female in the Western World (U,G) (Also Hist. of Art 350)

Three hours credit. M T W Th F 3:30-4:45.

Goldwin Smith 26. Ms. Benson.

An examination of some prominent types of images developed in the visual arts (painting, sculpture, films, and television). Lectures, discussions, and readings will take up such aspects of the image as the relationship to myth, philosophy and behavioral patterns, the latitude and character of choices available to the artist designing the image, the operation of the image in and on the society for which it exists, the shift from corporate to individualistic images, and the phenomenon of pseudotypes.

Geological Sciences

*Geol. Sci. 101u Introductory Geological Science (U)

Three hours credit. June 28 to July 21. Lectures, M T W Th F 9:30-11:20. Kimball 212. Laboratory, M T W Th 1:30-4. Kimball 212.

An introduction to geological science designed to give general students a comprehensive understanding of earth materials, processes, features, and history, and an understanding of important developments in modern geology. Field trips during certain laboratory periods. Fee, \$10.

*Geol. Sci. 102u Introductory Geological Science (U)

Three hours credit. July 24 to August 11. Prerequisite: Geol. Sci. 101 or its equivalent. Lectures, M T W Th F 9:30-11:20. Kimball 212. Laboratory, M T W Th 1:30-4. Kimball 212.

Continuation of Geol. Sci. 101, with emphasis on earth history, evolution of continents, oceans, mountain systems, and other features, and development of organic life. Field trips during certain laboratory periods. Fee, \$10.

Government

Gov. 101 American Government and Politics (U,G)

Three hours credit. M T W Th F 8-9:15. W. Sibley 318. Principles, problems, and processes in American political life.

Gov. 104 Comparative Government (U,G)

Three hours credit. M T W Th F 9:30-10:45. W. Sibley 318.

A comparative study of major contemporary political movements and of governmental institutions and processes in Great Britain, France, Germany, and Russia, as well as in some of the newly emerging countries.

Gov. 203 Introduction to Political Theory (U,G)

Three hours credit. M T W Th F 11-12:15. Goldwin Smith 164.

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. 206 Introduction to International Relations (U,G)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith 164. Mr. Rovine.
An introduction to the basic concepts and practice of international relations.

Gov. 316 The American Presidency (U,G)

Four hours credit. M T W Th F 12:30-1:45. W. Sibley 318. Mr. Lewis.
Analysis of the office and powers of the President with emphasis on the politics of the executive branch, executive-legislative relations, and the role of the President in the formation of public policy.

Gov. 318 The American Congress (U,G)

Four hours credit. M T W Th F 11-12:15. W. Sibley 318. Mr. Milnor.
An intensive study of politics and policy formation in Congress. Special emphasis on the problems of the representative assembly in the twentieth century.

Gov. 322 The Administration of Criminal Justice (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 164. Mr. Baar.
Once crime and law enforcement become major political issues, the workings of criminal justice must be studied in a political as well as legal context. This course will focus on the roles of legal professionals—prosecutors, judges, and defense attorneys—in the criminal process, and how political and managerial decision-making constrains these legal professionals, the police, and correctional agencies.

Gov. 382 American Foreign Policy (U,G)

Four hours credit. M T W Th F 8-9:15. Goldwin Smith 221. Mr. Smith.
Discussion of the political, social, economic, and military factors which influence the making and execution of American foreign policy. Critical examination of the major components of foreign policy: national interests, objectives and policy. To illustrate the importance of these components in relation to one another, their evolution during the twentieth century, and the determination of priorities by decision makers, consideration will be given to a number of major foreign policy actions.

History

Hist. 106 Introduction to Western Civilization (U,G)

Three hours credit. M T W Th F 8-9:15. Goldwin Smith 162. Mr. Williams.
A survey of European history since the French Revolution. Attention is given to the major political, social, and intellectual developments of the modern Western world. A considerable portion of the reading is in contemporary sources.

Hist. 210 American History, 1877-1960 (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 162. Mr. Slater.
The political, social, economic, diplomatic, and cultural history of the United States.

Hist. 370 Development of Modern Science (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 177. Mr. Williams.
A survey of the major ideas in modern science in their cultural and social context.

Hist. 410 The Jazz Age (U,G)

Four hours credit. M T W Th F 12:30-1:45. Goldwin Smith 162. Mr. Slater.
The 1920s and the crisis of American culture.

Hist. 498 American Urban History, 1780-1900 (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 177. Mr. Kelly.
The Central theme will be a comparison between pre-industrial and industrial cities, focusing on the social structure and external relations of each "type" of city. Readings will include theoretical and empirical works in the history of American urbanization.

Africans in The Making of the New World

See ASRC 361, p. 23.

Technology and Society—An Historical Perspective

See Mech.Eng. 3020, p. 31.

History of Mathematics

See Math. 203, p. 37.

History of Art

Hist. of Art 263 Twentieth-Century Art (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 26. Mr. Okun.
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.

Hist. of Art 314 Primitive Art (U,G)

Four hours credit. M T W Th F 11-12:15. Goldwin Smith 24. Mr. Scott.
Traditional forms, types, and uses of tribal arts in Africa, the Pacific, and North America. A selective survey of the styles of West Africa, the Congo, Melanesia, Polynesia, and the American Indian, noting the role of masks, images, and ritual objects in both village and courtly societies.

Hist. of Art 331 Art of the Medieval World (U,G)

Four hours credit. M T W Th F 8-9:15. Goldwin Smith 24. Mr. Calkins.
A general survey of the significant monuments of medieval culture from the fourth to the fifteenth centuries in Western Europe. Works of art in a wide variety of media will be discussed: mosaics, frescoes, illuminated manuscripts, monumental sculpture, ivory carving, metal work, and stained glass.

Hist. of Art 343 Art of The Renaissance (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 24. Mr. Calkins.
A survey of the sculpture and painting, primarily in Italy, of the fifteenth and early sixteenth centuries.

Emphasis will be on the contributions of such major artists as Ghiberti, Donatello, Michelangelo, and Raphael.

Hist. of Art 350 Visual Images of the Female in the Western World (U,G)

See Fem. St. 350, p. 33.

Hotel Administration

Typewriting

Hotel Adm. 610. Typewriting (U,G)

Two hours credit. Hotel elective. Enrollment limited to 35 students. M T W Th F 11-11:50. 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.

The Summer School of Hotel and Restaurant Administration is described on p. 51.

Human Development and Family Studies

HDFS 115 The Development of Human Behavior (U)

Three hours credit. Limited to 80 students. M T W Th F 9:30-10:45. MVR N207.

Provides a systematic analysis of the forces affecting human development from infancy to adulthood. Attention is focused on the interplay of biological factors, interpersonal relationships, social structure, and cultural values in changing behavior and shaping the individual. Special emphasis is given to the social implications of existing knowledge.

HDFS 500 Special Problems for Graduate Students (G)

Credit and hours to be arranged. S-U grades optional. Department faculty.

For graduate students recommended by their chairman and approved by the head of the department and the instructor in charge for independent, advanced work.

HDFS 599 Master's Thesis and Research (G)

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

HDFS 699 Doctoral Thesis and Research (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor and chairman of graduate committee. Department graduate staff.

HDFS 336u Methods and Materials Workshop for Teachers and Aides in Preschool Programs (U)

See p. 53.

Human Nutrition and Food

HNF 500 Special Problems for Graduate Students (G)

Credit and hours to be arranged. Department faculty. For graduate students recommended by their chairman and approved by the instructor in charge for independent, advanced work. Experience in research laboratories in the Department may be arranged.

HNF 599 Master's Thesis and Research (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor, Misses Armbruster, Bowering, Hester, Mondy, Morrison, Rivers, Schwartz, and Young. Mrs. Devine, Mrs. Roe, Mrs. Sanjur, Mrs. Visnyei, and Mrs. Snook; Mr. Lutwak.

HNF 699 Doctoral Thesis and Research (G)

Credit and hours to be arranged. S-U grades optional. Registration with permission of the instructor. Misses Armbruster, Bowering, Hester, Mondy, Morrison, Rivers, Schwartz, and Young. Mrs. Devine, Mrs. Roe, Mrs. Sanjur, Mrs. Visnyei, and Mrs. Snook; Mr. Lutwak.

Industrial and Labor Relations

ILR 250 Survey of Industrial and Labor Relations (U,G)

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

ILR 504 Labor Dispute Settlement (G,U with permission)

Three hours credit. Registration is limited to 20 students. Open to graduate students and, with permission, to advanced undergraduates. M T W Th F 11-12:15. Ives 118. Mr. Yaffe.

A historical and contemporary study of the role of government in the adjustment of labor disputes, particularly in public employment, including public education, uniformed employees (police and firemen), and other professional and nonprofessional employee classifications. Various governmental techniques for dealing with labor disputes, including mediation, fact finding, compulsory arbitration, and the use of injunctions will be analyzed. Significant attention will be given to the various statutory procedures which have been utilized to resolve public sector negotiation impasses in lieu of granting public employees the right to strike.

ILR 510 Economic and Social Statistics (U,G)

Three hours credit. No prerequisites. Lectures, M T W Th F 9:30-10:45. Ives 118. Laboratory, two sessions each week, to be arranged.

A nonmathematical course primarily for graduate stu-



dents 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, regression and correlation analysis, and selected topics from the area of statistical inference.

ILR 520 Organizational Behavior I (G)

Three hours credit. M T W Th F 9:30–10:45. Ives 216. Mr. Gruenfeld.

Survey of concepts and studies from the fields of individual and social psychology, selected for their pertinence to the area of organizational behavior. The relationship between research findings and application to organizational problems will be stressed. Consideration of individual differences of various kinds; attitude formation and its relation to social processes; factors affecting different kinds of learning; motivation and its relationship to productivity; perception and its relationship to evaluation of performance; leadership and the influence process; group formation and its effect on the individual and the organization.

ILR 607 Collective Bargaining in Public Education (G)

Three hours credit. M T W Th F 1–2:15. Ives 118. 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.

Mathematics

Math. 107 Finite Mathematics with Applications (U)

Three hours credit. Prerequisite: three years of high school mathematics. M T W Th F 9:30–10:45. White 328. Mr. Nerode.

This course is intended primarily for students in the more descriptive areas of biological and social sciences. Logic and set theory, probability, vectors and matrices, linear programming, functions and graphs.

Math. 111 Analytic Geometry and Calculus (U)

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

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

Math. 112 Analytic Geometry and Calculus (U)

Three hours credit. Prerequisite: Math. 111 or equivalent. M T W Th F 8–9:15. White 310. Mr. West.

Differentiation and integration of elementary transcendental functions, techniques of integration, polar coordinates, partial differentiation, introduction to multiple integration, power series.

Math. 192 Calculus for Engineers (U)

Four hours credit. Prerequisite: Math. 191 or its equivalent. M T W Th F 8–9:15, and F, 2–3:15. White B-29. Mr. Friedman.

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

Math. 200 Basic Concepts of Mathematics (U,G)

Three hours credit. Prerequisite: a good knowledge of high school mathematics including trigonometry. M T W Th F 9:30–10:45. White 310. Mr. Dennis.

Discussion of basic ideas in mathematics drawn from algebra and topology. An example of the problems treated is the proof of the impossibility of trisecting an angle by ruler and compass. This course is very suitable for teachers, prospective teachers, and for high school students with a strong interest in mathematics.

Math. 203 History of Mathematics (U,G)

Three hours credit. Prerequisite: Math. 111 or the equivalent. M T W Th F 11–12:15. White B-15. Mr. Platek.

A review of the history of mathematics from antiquity to the present. An attempt will be made to enter into the atmosphere of each period in order to appreciate the meaning of mathematics for that era. A balance will be maintained between the mystical, philosophical view of mathematics and the practical as exemplified in the arts, sciences, and technology of an era. A unifying theme will be the "golden mean" and its role from the construction of the pyramids to contemporary times.

Math. 213 Calculus (U)

Three hours credit. Prerequisite: Math. 112 or the equivalent. M T W Th F 8–9:15. White B-15. Mr. Rothaus.

Vector analysis, line integrals, multiple integration, differential equations, complex numbers, series.

Math. 294 Engineering Mathematics (U)

Three hours credit. Prerequisite: Math. 293. M T W Th F 8–9:15. Thurston 203. Mr. Torchinsky.

Linear differential equations, quadratic forms and eigenvalues, differential vector calculus, applications. Text: Block, Cranch, Hilton, Walker, *Engineering Mathematics*, vol. 2.

Math. 331 Linear Algebra (U,G)

Four hours credit. Prerequisite: Math. 112 or the equivalent. M T W Th F 11–12:15. White B-25. Mr. Rinehart.

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.

Math. 370 Elementary Statistics (U,G)

Four hours credit. Prerequisite: Math. 112 or 108, or the equivalent. M T W Th F 9:30–10:45. White B-29. Mr. P. J. Kahn.

Topics in probability which are essential to an under-

standing of statistics; introduction to the principles underlying modern statistical inference and the rationale 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.

Seminar on Mathematical Economics

See Econ. 300, p. 27.

Introductory Engineering Probability

See OR 9160, p. 31.

Seminar: Social Systems Analysis

See Soc. 663, p. 43.

Department of Modern Languages and Linguistics

Secondary 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, German, etc. (where offered), 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*u* and 132*u*, 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 or course 131*u*. Students who have taken previous course work in the language they elect will be placed in the appropriate 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 Department of Modern Languages and Linguistics for proper placement at the time of registration.

The 101 and 102 basic courses and the full course sequence, 131*u*–132*u*, have four hours of classroom instruction per day plus independent study. For this reason students who register for these courses are not permitted to register for any other courses. Time and place of first class meeting for these courses will be listed in the *Supplementary Announcement*, which will be distributed on registration day.

Linguistics and Foreign Languages

For those interested in linguistics and language teaching, the Department of Modern Languages and Linguistics offers the opportunity to combine an introduction to linguistics with a language course intended to increase students' speaking and reading skills to approximately the 700 CEEB achievement level.

Language teachers, students majoring in foreign languages, and M.A.T. candidates are referred to Linguistics 201 and the 203 course in French, German, Russian, and Spanish as listed on the following pages.

Ling. 201 Introduction to the Scientific Study of Language (U,G)

Three hours credit. M T W Th F 12:30–1:45.

An introductory survey course designed to acquaint the student with the nature of human language and with its systematic study. In the Summer Session, attention is also given to applied linguistics and other topics suitable for language teachers.

Psycholinguistics

See Psych. 215, p. 41.

French

Fr. 101 French Basic Course I (U)

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

Fr. 102 French Basic Course II (U)

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

Fr. 131*u* French Elementary Reading Course I (U,G)

Three hours credit. *June 28 to July 21*. Twenty hours of instruction per week. Mr. Noblitt and staff.

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

Fr. 132*u* French Elementary Reading Course I (U,G)

Three hours credit. *July 24 to August 11*. Prerequisite: French 131*u* or its equivalent. Twenty hours of instruction each week. Mr. Noblitt and staff.

A continuation of French 131*u*.

Fr. 203 Intermediate Conversation and Reading Course (U,G)

Three hours credit. M T W Th F 9:30–10:45. Lectures T and Th 11–11:50.

The course provides intensive verbal exercise in French in small classes with extensive reading, and is intended to produce a sharp improvement in verbal and reading skills. The course is open to students who have reached approximately the 560 CEEB achievement level and has the goal of raising their foreign language skills to the 700 level. The CEEB examination will be given at the end of the course.

Prospective teachers and teachers now in service will find the course especially appropriate for their needs.

German

Germ. 101 German Basic Course I (U)

Six hours credit. Students who have previously studied any German must take the qualifying examination

before registering for this course. See additional information, p. 38. Twenty hours of instruction each week. Mr. Kufner and staff.

Germ. 131u German Elementary Reading Course I (U,G)

Three hours credit. *June 28 to July 21*. Twenty hours of instruction per week. Mr. Kufner and staff. Designed to help students acquire a reading knowledge of the language.

Germ. 132u German Elementary Reading Course I (U,G)

Three hours credit. *July 24 to August 11*. Prerequisite: German 131u or its equivalent. Twenty hours of instruction each week. Mr. Kufner and staff. A continuation of German 131u.

Germ. 203 Intermediate Conversation and Reading Course (U,G)

Three hours credit. M T W Th F 9:30–10:45. Lectures T and Th 11–11:50.

The course provides intensive verbal exercise in German in small classes with extensive reading, and is intended to produce a sharp improvement in verbal and reading skills. The course is open to students who have reached approximately the 560 CEEB achievement level and has the goal of raising their foreign language skills to the 700 level. The CEEB examination will be given at the end of the course. Prospective teachers and teachers now in service will find the course especially appropriate for their needs.

See also Cornell Summer Program in Germany, p. 50.

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. See additional information, p. 38. Twenty hours of instruction per week. Mr. Leed and staff.

Russ. 203 Intermediate Conversation and Reading Course (U,G)

Three hours credit. M T W Th F 9:30–10:45. Lectures T and Th 11–11:50.

The course provides intensive verbal exercise in Russian in small classes with extensive reading, and is intended to produce a sharp improvement in verbal and reading skills. The course is open to students who have reached approximately the 560 CEEB achievement level and has the goal of raising their foreign language skills to the 700 level. The CEEB examination will be given at the end of the course. Prospective teachers and teachers now in service will find the course especially appropriate for their needs.

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. See additional information on p. 38. Twenty hours of instruction per week. Mr. Lozano and staff.

Span. 131u Spanish Elementary Reading Course (U,G)

Three hours credit. *June 28 to July 21*. Twenty hours of instruction per week. Mr. Lozano and staff. Designed to help students acquire a reading knowledge of the language.

Span. 132u Spanish Elementary Reading Course (U,G)

Three hours credit. *July 24 to August 11*. Prerequisite: Spanish 131u or its equivalent. Twenty hours of instruction each week. Mr. Lozano and staff. A continuation of Spanish 131u.

Span. 203 Intermediate Conversation and Reading Course (U,G)

Three hours credit. M T W Th F 9:30–10:45. Lectures T and Th 11–11:50.

The course provides intensive verbal exercise in Spanish in small classes with extensive reading, and is intended to produce a sharp improvement in verbal and reading skills. The course is open to students who have reached approximately the 560 CEEB achievement level and has the goal of raising their foreign language skills to the 700 level. The CEEB examination will be given at the end of the course. Prospective teachers and teachers now in service will find the course especially appropriate for their needs.

English as a Second Language

June 28–August 11

An intensive course in English for speakers of other languages will be given as part of the Summer Session. Modern methods of teaching language will be used to provide greater fluency and comprehension of both oral and written English.

This course is designed with particular attention to the requirements of nonnative English speakers who plan to attend institutions of higher learning and whose lack of fluency may hinder them. *No beginning students will be accepted.*

A diagnostic test will be administered to all students admitted to the course during the first week of classes. Students will attend classes four hours a day, and language laboratory facilities will be available.

Engl. 102 English as a Second Language (U,G)

Six hours credit. Prerequisite: placement by instructor. Twenty hours of instruction per week. Mr. Elliott. English 102 is an intensive English course for students at an intermediate level. Colloquial modern English is taught four hours a day, five days a week. The emphasis is on oral rather than written English. Time and place of first class meeting will appear in the *Supplementary Announcement* available on registration day.

Languages other than those offered by the Department of Modern Languages and Linguistics can be found on the following pages: Greek and Latin, p. 25.

Chinese (Mandarin and Cantonese) and Japanese, p. 48.
 French Literature, p. 42.
 Cambodian, Indonesian, Javanese, Thai, and Vietnamese, p. 56.

Music

Music 103 Main Streams of Popular Music (U,G)

Three hours credit. M T W Th F 9:30–10:45. Lincoln B-22. Mr. Sokol.

A study of popular music: folk, church, dance, theatre, popular classics, etc., emphasizing the why's, where's, and when's in the formation of popular taste. Intended to place popular music in a chronological perspective.

Music 111 Summer Session Choir (U)

One hour credit. Registration limited to members of the Summer Session 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. Paterson.
 Membership in the choir is not limited to persons who register for the course.

Music 130 The Music of North India— A Practical Approach (U,G)

Three hours credit. Prerequisites: ability to sing on pitch and consent of the instructor. M T W Th F 2–3:15. Lincoln B-22. Mr. Amaldev.
 Designed to impart a rudimentary knowledge of the aesthetics, theory, and practice of the classical music of North India. Primarily stressed will be the learning of the basic *raags* and *taals* through a standard repertoire of songs.

Music 464u Choral Style (U,G)

Two hours credit. July 9 to July 23. Registration only by consent of the instructor. Su M T W Th F 4–5:30; 7:30–9 p.m. S 1–3:30 p.m. Barnes Hall Auditorium. Mr. Sokol.
 Available to participants in the Choral Music Program. See Summer Arts Festival, p. 61.

Perception: Art and Music

See Psych. 305, p. 42.

Natural Resources

See Introductory Program in Field Ecology, pp. 49–50, and Teachers' Environmental Conservation Workshop, p. 57.

Ornithology

See Bio. Sci. 472, p. 24, and Ornithology Field Seminar, p. 54.

Philosophy

Phil. 100 Undergraduate Seminar in Philosophy (U)

Three hours credit. M T W Th F 9:30–10:45. Goldwin Smith 221. Mr. Campbell.

Topic: The existence of God. An intensive study and evaluation of the traditional arguments and other evidence, considered with a view to reaching a definite conclusion.

Phil. 225 Ethics (U,G)

Four hours credit. M T W Th F 11–12:15. Goldwin Smith 221. Mr. Campbell.

A systematic discussion of traditional topics in moral philosophy: the nature of pleasure and happiness, psychological and ethical egoism, Kant's Categorical Imperative, Hume on the nature of moral belief and argument, utilitarianism, moral rules, and justice. The class will also consider the application of these topics to contemporary problems, such as pollution and population control.

Contemporary Philosophy of Education

See Ed. 473, p. 27.

Physics

*Physics 105 Topics in Modern Physics (U)

Three hours credit. Prerequisites: three units of college preparatory mathematics and a one-year course in either secondary 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 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, background, and preparation. Physics 105 is not equivalent to Physics 101, 112, 201, or 207 of the academic year. Lecture, M, 10. Rockefeller B. Location of other meetings to be arranged.

Principal topics will probably be special relativity and quantum theory. Fee, \$5.

*Physics 112 Introductory Analytical Physics I (U)

Four hours credit. Prerequisite: one year of secondary school physics and Math. 111 or 191, or consent of instructor. Lectures, M T Th, Rockefeller D, and W F, Rockefeller B, 11–12:15; seminars and laboratory, T W Th F, Rockefeller 252, 2–5.
 The mechanics of particles: kinematics, dynamics, conservation of linear momentum, central-force fields, conservation of energy, periodic motion. The mechanics of many-particle systems: center of mass, angular momentum of a rigid body, simple rotational mechanics of a rigid body. Introduction to special relativity: invariance of velocity of light, Lorentz transformation, relativistic momentum and energy. At the level of *Fundamentals of Physics* by Resnick and Halliday. Fee, \$5.

Physics 213 Introductory Analytical Physics II: Electricity and Magnetism (U)

Three hours credit. Primarily for students of engineering and for prospective majors in physics. Prerequisites: Physics 112 or 207 and Mathematics 192 or 112 or equivalent. Lectures, T Th 9:30–10:45, Rockefeller B; Recitations M W F S 9:30–10:45, Rockefeller D. Electrostatics, behavior of matter in electric fields, magnetic fields, Faraday's Law, electromagnetic oscillations and waves, magnetism and relativity. At the level of *Physics, Part II* (1966) by Resnick and Halliday.

***Physics 213L Laboratory to Accompany Physics 213 (U)**

One hour credit. Prerequisite: coregistration in Physics 213 or consent of instructor. M W 2–5, Rockefeller 30. Experiments in electricity and magnetism. Fee, \$5.

Physics 214 Introductory Analytical Physics III: Optics, Waves, and Particles (U)

Three hours credit. Primarily for students of engineering and prospective majors in physics. Prerequisites: Physics 213 and Math. 293 or 221 or equivalent. Lectures, T Th 11–12:15, Rockefeller A; Recitations, M W F S 11–12:15, Rockefeller 105. Wave phenomena; electromagnetic waves; physical and geometrical optics; quantum effects, matter waves; uncertainty principle; introduction to wave mechanics and elementary applications. At the level of *Fundamentals of Optics and Modern Physics* by H. D. Young.

***Physics 214L Laboratory to Accompany Physics 214 (U)**

One hour credit. Prerequisite: coregistration in Physics 214 or consent of instructor. T F 2–5, Rockefeller 30. Experiments in optics and contemporary physics. Fee, \$5.

***Physics 360 Introductory Electronics (U,G)**

Three hours credit. Prerequisites: Physics 208 or 214L, or consent of the instructor. Lectures and laboratory, M T W Th F 2–5, Clark 309. Introduction to the principles of semiconductor 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; or *Basic Electronics for Scientists*, 1966, by Brophy. Fee, \$10.

***Physics 490 Independent Study in Physics: Advanced Experimental Physics (U)**

Three hours credit. Prerequisites: Physics 218L or 310 or 360 or 400, 303 or 319, and 322, or 325, or consent of the instructor. Individual project work carried out in conjunction with the Physics 510 Laboratory; see topics available in Physics 510, listed in the Special Programs section, p. 55. Fee, \$15.

***Physics 500 Informal Graduate Laboratory (G)**

One or two hours credit. Prerequisites: Physics

218L, 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.

This laboratory is associated with the Physics 510 laboratory; see topics in Physics 510, listed in the Special Programs section, p. 45. Fee, \$5 per credit hour.

Policy Planning and Regional Analysis

See Continuing Education in Planning, p. 56.

Psychology**Psych. 101 Introduction to Psychology: Bases of Human Behavior (U,G)**

Three hours credit. M T W Th F 11–12:15. Social Science 601. Mr. Warren. Emphasizes the study of human behavior from the standpoint of the basic processes. Topics include brain functioning, dreaming, intelligence, psychological testing, perception, learning, motivation, emotion, abnormal behavior, and psychiatry. The course centers upon contemporary problems confronting psychologists and is supported by discussion seminars.

See also HDFS 115, The Development of Human Behavior, p. 35, and Soc. 101, Man and Society, p. 42.

Psych. 102 Introduction to Psychology: Personality and Social Behavior (U,G)

Three hours credit. M T W Th F 12:30–1:45. Social Science 281. Messrs. Eustis, Poppen, and Tan. 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. 210 Memory and Attention (U,G)

Three hours credit. M T W Th F 8–9:15. Social Science 204. Miss Kerr. A study of the relations between the constructive processes of attention and memory; emphasizing recent studies of attentive and preattentive processes in vision, of selective listening, of short-term memory and recoding, and of long-term memory and imagery.

Psych. 215 Psycholinguistics (U,G)

Three hours credit. Prerequisite: an introductory course in psychology. M T W Th F 11–12:15. Social Science 204. Misses Long and Yoselson. This course is a general introduction to the use of language in human communication. Questions include: How do children learn their native language? How do speakers produce and understand sentences? Is animal communication related to human language? What is the relation between language and thinking? Does language relate to other processes, such as perception and memory? There will be many demonstrations as well as class discussions.

Psych. 224 Brain and Behavior (U,G)

Three hours credit. M T W Th F 12:30-1:45. Social Science 204. Miss Immler.

Problems in the relation between brain function and behavior such as disorders in language, drugs and behavior, neural mechanisms in sleep and dreams.

Psych. 282 The Psychology of Woman (U,G)

See Fem. St. 220, p. 33.

Psych. 285 Personality and Social Systems (U,G)

Three hours credit. Prerequisite: one course in psychology or human development or permission of instructor. M T W Th F 9:30-10:45. Social Science 260. Messrs. Eustis, Poppen, and Tan.

This course will focus on three of the important issues which personality psychology attempts to address: (1) the experience of selfhood; (2) the development of a moral basis for behavior; and (3) the structure of underlying value systems. Various theoretical and developmental positions will be assessed with reference to laboratory, survey, and cross-cultural evidence; and an attempt at integration of the concepts will be made.

Psych. 305 Perception: Art and Music (U,G)

Three hours credit. M W Th 1:30-3:30. Social Science 260. Mr. Barrand.

The perception of art and music has traditionally been treated as a set of problems in the philosophy of criticism, i.e., aesthetics. This approach has been limited by the lack of an overall psychological model of explanation. This course examines the perception, appreciation, evaluation, creation, etc., of aesthetic objects' in various art forms by making use of the orientation to perception inherent in the work of James J. Gibson. The first half of the course will develop a general descriptive system for a psychology of aesthetics, incorporating examples from the visual arts and music. The latter half will involve various demonstrations and experiments on art and folk music, aimed at specifying the information (e.g., distinctive features, invariants) in visual and musical displays.

Psych. 325 Abnormal Psychology (U,G)

Three hours credit. T W Th 3-5. Social Science 204. Mr. Mack.

An introduction to the study of disordered behavior. Description of major syndromes, investigations and theories of etiology, and approaches to treatment, will be covered in an attempt to introduce the student to major concepts and problems in this area.

Psych. 326 Comparative Psychology (U,G)

Three hours credit. M T W Th F 11-12:15. Social Science B124. Miss West.

This course will investigate the rationale behind the study of animal behavior by psychologists, going beyond description and attempting to deal with the processes and mechanisms of such behavior throughout the phyletic scale, including man. Emphasis will be placed upon the articulation of psychological processes, rather than upon the explication of specific physiological mechanisms.

The course will provide an overview of the historical and philosophical roots of the study of animal be-

havior, with stress upon the development of the divergence of European ethology and American comparative psychology from a common origin (e.g., Darwin, Romanes, McDougall, G. S. Hall, C. L. Morgan, Heinroth, etc.). Relevant data (e.g., egg rolling in the Greylag goose, conditioning in planaria, use of tools by animals, imprinting, perceptual learning) for the development of comparative psychology and ethology will be considered. The learning-instinct dichotomy will be used as a convenient conceptual framework for these discussions. Students with an interest in biology, psychology, zoology, evolution, and problems in animal behavior are encouraged to take the course.

Organizational Behavior I

See ILR 520, p. 37.

Educational Psychology

See Ed. 511, p. 29.

Psychological Anthropology

See Anthro. 305, p. 24.

Psychology of Adolescents

See Ed. 417, p. 27.

Romance Studies**French Literature****Fr. 201 Introduction to French Literature (U,G)**

Three hours credit. Prerequisite: qualification in French and the ability to read literary French with some facility. M T W Th F 8-9:15. Goldwin Smith 281. Mr. Seznec.

This course will acquaint the student with a number of major works in French literature. Students who wish to do so, may amplify and refine their knowledge of the French language in this course. The works read will be: Proust, *Un Amour de Swann*; Robbe-Grillet, *La Jalousie*; Appollinaire, *Textes Choisis*; Sartre, *Huis-Clos*; Genet, *Le Balcon*.

Fr. 300 Aspects of the French Comic Stage (U,G)

Four hours credit. Prerequisite: French 201 or permission of the instructor. M T W Th F 9:30-10:45. Goldwin Smith 281. Mr. Seznec. A contrasted study of a number of French comic writers: Corneille, Molière, Marivaux, Beaumarchais, Feydeau, Ionesco.

Sociology**Soc. 101 Man and Society (U)**

Three hours credit. M T W Th F 8-9:15. Social Science 601. Mr. Reissman.

An introduction to the principal concepts and perspectives of contemporary sociology. The course is organized around illustrative sociological research and offers experience with the data and techniques of the discipline.

Soc. 230 Population Problems (U,G)

Three hours credit. M T W Th F 9:30-10:45. Goldwin Smith 128. Mr. Lasorte.

The practical and scientific significance of population growth and composition. Fertility, migration, and mortality in relation to social and cultural factors and in relation to questions of population policy. National and international data will receive approximately equal emphasis.

Soc. 262 Public Opinion (U,G)

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

Goldwin Smith 120. Mr. Meyer.

Factors determining the character of public opinion on the basis of relevant social, psychological, and political science knowledge. The nature, development, and control of public opinion in terms of opinion formation and change and the relation of public opinion to social and political action. The role of the communication media of radio, television, press, and motion pictures in determining public opinion.

Soc. 447 Sociology of Health and Medicine (U,G)

Four hours credit. Prerequisite: two courses in the social sciences or premedical status. M T W Th F 11-12:15. Goldwin Smith 128. Mr. Wan.

An analysis of health, illness, and the health professions and institutions from the sociological perspective. Topics to be considered will include social epidemiology, mortality and morbidity, the social psychology of illness, the socialization of health professionals, the organization of health care and patient-professional relationships. Some attention will be directed to health and medical care in developing areas.

Soc. 541 Social Organization and Change (U,G)

Four hours credit. Prerequisite: a college course in social theory or graduate student standing. M W 2-5. Goldwin Smith 128. Mr. Meyer.

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 organizations, societies) and also in terms of its social processes and properties (integration, authority, conformity, and deviance).

Soc. 663 Seminar: Social Systems Analysis (G)

Four hours credit. Prerequisite: Soc. 524 or permission of the instructor. T Th 2-5. Goldwin Smith 120A. Mr. Henry.

Mathematical models for systems analysis, with emphasis on linear models for longitudinal data. For continuous variables, certain of the literature in econo-

metrics and time-series analysis will be explored, with particular concern for the analysis of nonrecursive systems, identification and estimation problems. For discrete variables, Markov chains and variations thereof will be reviewed with consideration of transition probabilities as dependent variables. The close connections between techniques for the analysis of continuous and discrete variables will be stressed.

Organizational Behavior I

See ILR 520, p. 37.

Personality and Social Systems

See Psych. 285, p. 42.

Theatre Arts

Th. Arts 280 Beginning Acting (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lincoln 304. Staff.

Introduction to the problems and basic techniques of contemporary acting. Practice in creative exercises, pantomime, improvisation, physical and imaginative script interpretation.

Th. Arts 300 Directed Studies (U,G)

Credit and hours to be arranged. Department staff. Individual study of special topics to be arranged with departmental member directing the study.

Th. Arts 335 American Drama and Theatre (U,G)

Three hours credit. M T W Th F 9:30-10:45. Lincoln 302. Mr. Carlson.

A study of the American theatre and representative American plays with emphasis on the drama from O'Neill to the present.

Cornell Summer Repertory Theatre

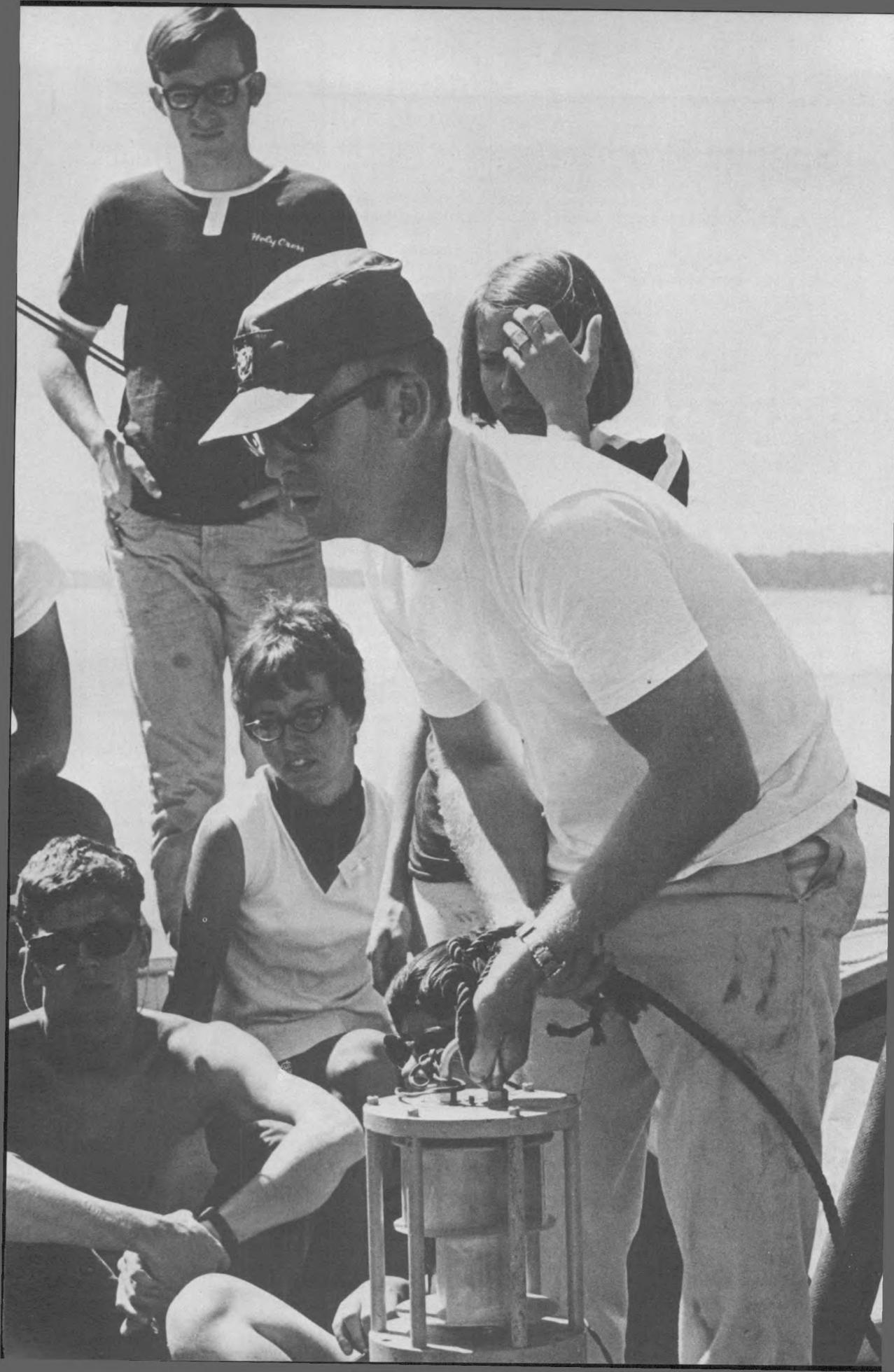
See Summer Arts Festival, p. 62.

Typewriting

See Hotel Admin. 610, p. 35.

Urban Planning and Development

See Internship Program, p. 57, and Urban Planning Field Problem, p. 57.



Special Programs

The Special Programs of the Summer Session are designed, in most cases, to serve a specific clientele in a particular discipline. Special Programs are often scheduled for periods not consistent with the regular Summer Session offerings; and tuition rates, application procedures, registration process, etc., may also vary from the Summer Session procedures. The variations are noted in the descriptions of each program.

Additional Special Programs may be added before the session begins. A listing of these additions may be obtained from the Dean of Summer Session, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

In certain programs it is possible for a student registered in the regular Summer Session to elect a course from a Special Program as part of his schedule.

In cases of this nature, the Summer Session tuition rate of \$75 per credit hour will apply for the elected course rather than the rate specified for the Special Program and, in addition, the \$5 per week general fee will apply for any additional weeks not covered by the regular Summer Session registration.

Depending on the date the program begins, a student admitted to a Special Program may add a course from the Summer Session listings to complete his summer studies. *In cases of this nature, the student will pay the full rate of the Special Program plus the tuition rate of \$75 per credit hour for the Summer Session course and the \$5 per week general fee for any additional weeks not covered by his Special Program enrollment.* (See Tuition and Fees, pp. 11-12.) Registration in a course in a Special Program must have the approval of the director of that program.

Instructions for requesting further information and application forms accompany the descriptions of the following Special Programs. The application form in the back of this *Announcement* is not for Special Programs.

Advanced Placement Program for Secondary School Juniors

June 28-August 11

The Advanced Placement Program for Secondary School Juniors, open only to academically talented

students who will have completed the eleventh year in secondary school by June 1972, is offered to enable college-bound students to achieve advanced placement in college.

The program offers college-level courses in anthropology, biological sciences, chemistry, classical Greek, comparative literature, computer science, economics, English, geological science, government, history, human development, French, German, Russian, Spanish, linguistics, mathematics, physics, psychology, and sociology. Students may earn a minimum of six credit hours to be recorded with the registrar of Cornell University for subsequent transfer as desired. The program 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 \$650. This covers all costs except textbooks and personal expenses.

Brochures regarding this program were mailed in January and the deadline has passed for requesting application forms for the 1972 program. Those interested in the 1973 program may receive further information by writing to the Director, Advanced Placement Program, Secondary School Juniors, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Agricultural and Occupational Education Summer Program

July 10-28

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

Graduate credit earned in these three-week unit courses may be applied toward the Cornell residence requirement for the professional degrees but not for other Cornell graduate degrees. Students desiring to become candidates for a professional degree

should also register in the Graduate School (See pp. 13-15). The courses may also be applied toward certification requirements.

Final registration for the three-week session will take place on July 10, 1972, at a time and place to be announced.

For further information and application forms address William E. Drake, Agricultural and Occupational Education Summer Program, 204 Stone Hall, Cornell University, Ithaca, New York 14850.

A complete outline of the course offerings follows.

***Ag. Econ. 407u Agricultural Business Financial Management Systems (U,G)**

Two hours credit. July 10 to July 28. Lectures, M T W Th F 8-9:50. Warren 160. Mr. Bratton.

This course will cover aspects of financial management systems related to individuals and agricultural businesses. Principles will be reviewed and then illustrated with practical applications. Wise use of capital resources will be stressed. Tools for use in analyzing financial situations and in making management decisions will be examined. Credit, insurance, financial budgeting, controlling costs, and estate planning will be discussed. Fee, \$5.

***Agr. Engr. 405u Fundamentals of Welding (U,G)**

Two hours credit. July 10 to July 28. M T W Th F 10-11:50 and M T Th 1-4. Riley-Robb 60, 64. Mr. Lechner.

Instruction and practice in fundamentals of welding, electric arc, oxyacetylene, and inert gas, related to repair and construction work in farm and job shops. The course is designed primarily for occupational teachers, but any interested student may enroll. Fee, \$5.

***An. Sci. 420u Animal Genetics (U,G)**

Four hours credit. July 10 to July 28. Lectures and laboratories M T W Th F 9-1. Morrison 342. Messrs. Van Vleck, Henderson, and Everett.

A workshop approach to the application of principles of genetics to problems involved in the improvement of animals, especially dairy cattle and other farm animals. Fee, \$5.

Ed. 433u Special Problems, Leadership in Occupational Youth Organizations (U,G)

Two hours credit. July 10 to July 28. M T W Th F 10-11:50. Warren 232. Mr. Bail.

The nature of democratic leadership: theories of leadership, what the leader must do, what the leader must be. Principles pertinent to the training of leaders, activities and experiences for training leaders. Application of leadership in occupational youth organizations: setting group goals, achievement of group goals, building team spirit, and consideration of problems confronting advisers of youth organizations.

Ed. 532u Methods and Materials of Teaching Agricultural and Occupational Education (U,G)

Two hours credit. July 10 to July 28. Lectures, M T W Th F 8-9:50. Warren 232. Mr. Berkey.

Consideration is given to an analysis of selected teaching techniques and to the selection, preparation, and use of instructional materials.

Ed. 499u Informal Study in Education (U,G)

Two hours credit maximum. Hours as arranged. Consent of instructor required. Staff.

Ed. 500u Special Studies in Education (G)

Credit hours as arranged. Consent of instructor required. Students working on thesis or other research projects may register for this course. Staff.

Architecture Summer Term

June 26-August 11

Elective Design 119

A summer session will be offered in the Field of Architecture if there is sufficient student demand. The term, of seven weeks duration, is offered on the undergraduate level only.

The summer session will focus on design problems which result in final products. Design studio work will be supplemented by appropriate lectures, seminars, and possibly field trips.

It is hoped that undergraduate architecture students whose primary interests are architectural design and whose secondary interests involve either computer applications or architectural structures will participate. These secondary interests are *not* a prerequisite for students only desiring the design component.

Upon satisfactory completion of the summer session, students may receive the equivalent of six required design credits or six required design credits plus three in-college elective credits. By petition of the student, the credits may be considered one term of design as required in the curriculum.

Registration will be limited to architectural students of satisfactory standing. Students from schools of architecture other than Cornell are invited to apply to the College for admission to the program.

The directors of the program are Alan Chimacoff and Donald P. Greenberg.

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

Problem-Solving in the Building Industry

The Department of Architecture is offering a special program in the summer term characterizing aspects of the building industry and exploring problem-solving opportunities within the industry.

The program will be divided into two interrelated sections: a lecture seminar describing the industry and a workshop in which both analytic tools and synthetic products suitable for use in the study of the industry will be developed. Nine credit hours will be given for successful completion of the program.

Admission is open primarily to advanced undergraduate and graduate students in the areas of architecture; management; and civil, industrial, and

mechanical engineering. Prior formal design training is not required.

The program will be organized and staffed by a small group of individuals whose interests and experiences are entirely interdisciplinary. These primary contributors will be complemented by a series of guest lecturers and occasional field trips.

For further information, contact Dean Heerwagen, Program Director, 144 East Sibley Hall, Cornell University, Ithaca, New York 14850.

Cornell Alumni University

July 9–August 5

The Cornell Alumni University, a special summer program designed for alumni, their families, and their friends, provides an opportunity for continuing education based on a broad approach to man and his values in today's society. The program, consisting of four one-week units, offers two series of lectures on each week's topic. The first and third weeks will be on the United States, and the second and fourth weeks will be on China. Seminars will be held following the lectures to afford all participants an opportunity to share and exchange their viewpoints.

This educational program, together with the natural beauty of the Cornell campus, and the recreational opportunities for which the Finger Lakes Region is known, offers both a stimulating and pleasantly relaxing vacation.

Families are encouraged to attend both weeks, and provisions have been made for children of all ages. The teenagers can participate in a modified academic and recreational program which is designed to stimulate their interest in higher education and acquaint them with the opportunities afforded at Cornell University. A day camp will be available for youngsters from five through twelve years of age, a nursery school for the three- to five-year-olds, and, at an additional charge, individual babysitting will be available for children under three years of age.

Tuition charge per week per person, including room and board, is \$130 for adults and \$80 for youngsters. Any additional fees will be indicated on the application for admission.

The program expects to accommodate approximately 160 adults per week. For alumni, all applications will be accepted on a first-come, first-served basis. Individuals who are not Cornell graduates are welcome to join the program provided space is available.

For further information and application forms, write to Mr. G. Michael McHugh, Director, Cornell Alumni University, 431 Day Hall, Ithaca, New York 14850.

The United States—Technology and Changing Values

First and third weeks: July 9–15 and July 23–29

Cornell Faculty Presenting Lecture Series:

David L. Call, Ph.D., H. Edward Babcock Professor of Food Economics, Graduate School of Nutrition
Ian R. Macneil, LL.B., Professor of Law

William Provine, Ph.D., Assistant Professor of History of Science

J. Mayone Stycos, Ph.D., Professor of Sociology and Director of International Population Program

China—A Search for Understanding

Second and fourth weeks: July 16–22 and July 30–August 5

Cornell Faculty Presenting Lecture Series:

Tsu-lin Mei, Ph.D., Associate Professor of Chinese Literature and Philosophy

David P. Mazingo, Ph.D., Associate Professor of Government, Director of China Program, Asian Studies

Kenneth L. Robinson, Ph.D., Professor of Agricultural Economics

Martie W. Young, Ph.D., Professor of History of Art, Curator of Asian Art

Institute in Deterministic Methods in Operations Research

June 26–August 4

Deterministic Methods in Operations Research, a summer institute supported by the National Science Foundation, is intended for college teachers of mathematics, operations research, industrial engineering, management science, mathematical economics, and related areas. There will be daily lectures on topics in mathematical programming and game theory where the basic mathematical methods and recent applications will be emphasized. There will be additional lectures in order to present a general survey of the analytical techniques used in operations analysis. Institute participants may receive credit for the two courses listed below if they so choose.

Brochures regarding this program were mailed in January and the deadline has passed for requesting application forms for the 1972 program. A similar summer institute on the stochastic methods of operations research is planned for 1973 if financial support is forthcoming.

Further information may be obtained by writing Professor William F. Lucas, Director, Operations Research Department, Upson Hall, Cornell University, Ithaca, New York 14850.

OR 9530 Mathematics Programming I (G)

Three hours credit. *June 26 to August 4.* Time and place of class meetings to be arranged. Mr. Nemhauser.

The geometry and duality of linear programming. Complete regularization and the resolution of degeneracy. Adjacent extreme-point methods such as the simplex, dual, and multipage in linear and nonlinear problems. Models of transportation and network type, and zero-sum and two-person games. Mixing routines and decomposition. Introduction to integer programming. Convex programming and Kuhn-Tucker theory.

OR 9535 Game Theory (G)

Three hours credit. *June 26 to August 4.* Time and place of class meetings to be arranged. Messrs. Lucas and Billera.

Two-person zero-sum games: the minimax theorem, relationship to linear programming. Two-person general-sum games. Noncooperative n-person games; Nash equilibrium points. Cooperative n-person games: the core, stable sets, Shapley value, bargaining set, kernel, nucleolus. Games without side payments. Games with infinite numbers of players. Economic market games.

East Asian Language Program

June 12–August 18

The East Asian Language Program is a program of intensive language instruction in Chinese (Mandarin and Cantonese) and Japanese.

These courses meet four hours per day in addition to regularly scheduled daily laboratory study. Twelve credit hours is the maximum for which a student may register, and is the equivalent of one year of study in a regular academic-year course.

Tuition for the program is \$75 per credit hour. Fees amount to \$5 per week. For further information and application forms, write Professor John McCoy, East Asian Language Program, 134 Morrill Hall, Cornell University, Ithaca, New York 14850.

Chinese 101u Elementary Chinese (Mandarin) (U,G)

Six hours credit. *June 12 to July 14.* Must be taken with Chinese 102u. Mr. McCoy.

Chinese 102u Elementary Chinese (Mandarin) (U,G)

Six hours credit. *July 17 to August 18.* Must be taken with Chinese 101u. Mr. McCoy.

Chinese 101C Elementary Cantonese (U,G)

Six hours credit. *June 12 to July 14.* Must be taken with Chinese 102C. Mr. McCoy.

Modern spoken Cantonese and written Chinese in Cantonese pronunciation.

Chinese 102C Elementary Cantonese (U,G)

Six hours credit. *July 17 to August 18.* Must be taken with Chinese 101C. Mr. McCoy.

Modern spoken Cantonese and written Chinese in Cantonese pronunciation.

Japanese 101u Elementary Japanese (U,G)

Six hours credit. *June 12 to July 14.* Must be taken with Japanese 102u. Mrs. Jorden.

Japanese 102u Elementary Japanese (U,G)

Six hours credit. *July 17 to August 18.* Must be taken with Japanese 101u. Mrs. Jorden.

Pre-Engineering Program for Talented High School Juniors

June 28–August 11

This program, partially supported by the National Science Foundation, combines noncredit engineering

topics with credit-earning advanced placement college-level work. Each represents approximately one-half of the program. The program is intended for secondary-school juniors and requires full attendance for the six-week session.

Engineering activity consists of two three-week mini-courses bridged by a continuing lecture and discussion series. These will provide insight into the application of scientific principles with societal consciousness, and with the understanding of the interaction of the many factors affecting the optimizing of the principles of science, engineering, and technology. Credit will not be given for the engineering topics portion of the program, but the work load approximates that of a three-credit-hour course.

For advanced placement credit, college-level courses are available in chemistry, calculus, and computer science. Students may earn three credit hours in one of these three disciplines, to be recorded with the registrar of Cornell University for subsequent transfer as desired.

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. Because the noncredit portion of this program is supported by the National Science Foundation, the cost to the student is reduced considerably. The total charge to each student is \$525, which covers all costs on campus except textbooks, personal expenses, and transportation to and from Ithaca.

Brochures regarding this program were mailed in January and the deadline has passed for requesting application forms for the 1972 program. Those interested in the 1973 program may receive further information by writing to Donald G. Dickason, Director, Pre-Engineering Program for Talented High School Juniors, Carpenter Hall, Cornell University, Ithaca, New York 14850.

Engineering Cooperative Program Summer Term

May 30–September 1

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.

Courses are scheduled in two separate but consecutive seven-week periods: first period, May 30–July 15; second period, July 17–September 1. A schedule of courses to be offered will be available after April 15, 1972.

Because the Cooperative Program Summer Term is essentially a curriculum term in the College of

Engineering, tuition and fees are not those of the six-week Summer Session but are based upon the regular tuition and fees for a semester in the academic year.

In general, the regulations described for the Summer Session apply also to the Engineering Cooperative Program Summer Term. Health services and library facilities are available during the Engineering Cooperative Program Summer Term.

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

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

Engineering Short Courses

The Engineering Short Courses are noncredit courses intended for practicing engineers and scientists who wish to extend or update their knowledge of various technical subjects. The courses listed below are coordinated by the Office of Continuing Education in the College of Engineering and include lectures, computation sessions, and laboratory periods.

For information and application forms, write to the Director of Continuing Education, Carpenter Hall, Cornell University, Ithaca, New York 14850, or call 607/256-4326.

Computer Science

Automatic Indexing and Library Information

Professor G. Salton. Fee: \$300. Five Days. *June 12-16.*

Compiler Construction

Professor D. Gries. Fee: \$275. Four Days. *June 12-15.*

Engineering Management

Managing Technical Personnel

Professor T. M. Lodahl. Fee: \$275. Four Days. *June 12-15.*

Modern Engineering Concepts for Technical Managers

Staff of thirty plus lecturers. Fee: \$975 (including housing and meals). Two weeks. *June 12-23.*

Environmental Engineering

Engineering Control of Industrial Wastewater

Professors C. D. Gates, A. W. Lawrence. Fee \$300. Five days. *June 19-23.*

Environmental Effects of Electrical Power Production

Professors K. B. Cady, F. C. Gouldin. Fee: \$275. Four days. *June 12-15.*

Principles of Neutron Activation Analysis

Professors V. O. Kostroun, R. McPherson. Fee: \$275. Four days. *June 12-15.*

Transportation Planning and Analysis

Professors L. M. Falkson, A. H. Meyburg, P. R. Stopher. Fee: \$300. Five days. *June 12-16.*

Management Science/Operations

Research

Mathematical Techniques in Production Control

Professor W. L. Maxwell. Fee: \$275. Four days. *June 12-15.*

Structural Engineering

Finite Element Analysis: Fundamentals

Professors R. H. Gallagher, O. C. Zienkiewicz. Fee: \$300. One week. *June 5-9.*

Finite Element Analysis: Advanced Topics

Professors R. H. Gallagher, O. C. Zienkiewicz, P. V. Marcal. Fee: \$300. One week, *June 12-16.*

(Note: The second week may be taken independent of the first for those qualified. The fee for a single registrant, registering for both weeks at the time of initial registration, will be \$550.)

Structural Design for Earthquakes and Other Dynamic Loads

Professor P. Gergely. Fee: \$300. Five days. *June 12-16.*

Introductory Program in Field Ecology

July 19-August 18

The program in field ecology will feature a unique, integrated study of terrestrial and aquatic ecology of the eastern United States. All factors of the environment, from soils and geology to plants and animals, including man, will be considered. Emphasis will be placed on field studies. Students will design and conduct individual projects. Seminars and special lectures will be presented by authorities.

Field work will be done at two properties owned by Cornell University: Arnot Forest and Shackleton's Point. The course is open to all interested students, graduate or undergraduate, who have had at least one year of college biology and who have had experience in the use of taxonomic keys. The cost per person is \$590. This amount covers tuition, fees, room and board, insurance, and transportation during the four and one-half week period. Limited financial help in the form of assistantships is available.

Enrollment will be limited to thirty students; applications must be received by April 30, 1972. Requests for application forms should be sent to Director, Summer Program in Field Ecology, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Nat. Res. 310u Basic Field Ecology (U,G)

Six hours credit. *July 19–August 18*. Prerequisites: at least one year of college biology and experience in the use of taxonomic keys. Lectures, seminars, and field studies. Messrs. Kelley and Winch are in charge, supplemented by other faculty.

The Cornell Food Executive Program

June 12–23

The Cornell Food Executive Program is designed to contribute to the continuing education of food industry executives who are being prepared for positions with broad responsibilities, requiring an understanding of the various segments of the food industry. Executives whose experiences have been concentrated in one or two functional areas in one segment of the food industry will find the program extremely valuable.

Enrollment will be limited to twenty-five executives in order to facilitate free and open discussion among the participants and faculty. Lectures will be used when necessary, but for the most part, meetings will be discussion-oriented and center around case studies, reading assignments, and personal experience of the faculty and participants. The program is divided into the following six areas: Effective Communications, Food Marketing, Government's Role in the Food Industry, Labor and the Food Industry, Management and the Computer, Managerial Accounting and Finance.

For information and application forms write to Dr. Earl Brown, Director, Food Executive Program, 205 Warren Hall, Cornell University, Ithaca, New York 14850.

Cornell Summer Program in Germany

June 5–August 28

Cornell University's Summer Program in Germany affords students the opportunity of receiving instruction in German language and literature and studying the contemporary culture of modern Germany. Instruction will be under the supervision of the Goethe Institute. Classes will meet Monday through Friday; weekends will be free. All students must have qualification in German (CEEB score of 560 or higher) or equivalent competency at the beginning of the program. Participants will be divided into groups according to their level of preparation.

Besides the regularly scheduled classes, there will be group activities and trips to local points of interest. To facilitate maximum exposure to the German-speaking environment, students will live with German families.

The courses taken will be roughly equivalent to those offered at Cornell University during the regular academic year. Six hours of college credit will be granted for satisfactory completion of the program.

The cost of the program will be approximately \$550, which includes room and board for eight weeks, tuition, and all activities sponsored by the program. The cost does not include transportation to and from Germany, cost of books and materials, or personal expenses.

The deadline for the 1972 program has already passed. Those interested in a similar program for 1973 may receive further information by writing to the Chairman, Department of German Literature, 172 Goldwin Smith Hall, Cornell University, Ithaca, New York 14850.

Unit Courses in Guidance

June 28–July 21

Unit courses in guidance are offered by the Department of Education. The four 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 is at the graduate level and may be applied toward meeting requirements for permanent certification for school guidance positions.

For further information and application forms, address Professor Dalva E. Hedlund, 216 Stone Hall, Cornell University, Ithaca, New York 14850.

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

Two hours credit. *June 28 to July 21*. Prerequisite: provisional certification in guidance. M T W Th F 12:30–2:10. 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. *June 28 to July 21*. Prerequisite: a course in psychological testing. M T W Th F 10–11:40. Barnes 203. 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.

Ed. 588u Case Studies in Counseling (G)

Two hours credit. *June 28 to July 21*. Prerequisites: Ed. 555, 582, 583, and 585, or their equivalents. M T W Th F 8–9:40. East Roberts 223.

An advanced course in counseling in which cases are used for illustrative purposes. Preparation for and conducting of counseling interviews; the making of case studies; referral and other procedures. Required for permanent certification in guidance in New York State.

Ed. 589u Affective Education (G)

Two hours credit. *June 28 to July 21*. Enrollment is limited to 36 students. M T W Th F 10-11:40. East Roberts 223. Mr. Hedlund.

Affective education is the developing curriculum area designed to teach the student skills for understanding and guiding his own personal development. This course will utilize an experience-based, participatory design to develop basic interpersonal and small group skills, and to introduce a conceptual framework for the design, application, and evaluation of humanistic education techniques and courses. The course is appropriate for counselors, teachers, and administrators concerned with the development of psychological education offerings in the school or college. Meets New York State permanent certification requirement for counselors, optional courses category. Note: Due to the structure of this course, enrollment will be limited to 36 students. Applications should be submitted as early as possible, and no later than June 1, 1972.

Health Administrators Development Program

June 18-30

The Health Administrators Development Program is an integrated two-week seminar for health care executives, dealing with health care policy, international health care trends, health planning and administrative and technological advancements. Through a series of presentations, discussions, and readings, the program analyzes the complex relationships between public policy, planning, and administration.

The program is directed toward upper-echelon executives who are seeking a broad and challenging perspective of health services. At the same time, the program offers participants an opportunity to strengthen specific management skills. More than 380 administrators and planners from the health field have taken part in the Health Administrators Development Program over the past fourteen years.

The charge to each participant or his sponsoring organization for tuition, room, and board will be \$800. A certificate will be awarded the individuals completing the course.

Thirty-five participants will be selected for the 1972 Program on the basis of formal applications, which must be returned no later than June 1. Executives from community hospitals and health centers, university medical centers, psychiatric hospitals, health planning councils, state and federal health agencies, and other health organizations will be con-

sidered for enrollment. Preference is given to those health service administrators and planners who show evidence of professional and civic leadership extending over some years. Accordingly, the preferred age range is from thirty-two to fifty-five years.

The four major areas of emphasis—health policy, international health care trends, planning, and administrative and technological advances—are developed in the daily seminars which are coordinated by the resident faculty members. Subjects for discussion include, for example, the evolution of public policy for health care, public participation and accountability, the impact of technology on health care, new delivery approaches to health services, political and community process in health planning, as well as the processes of system analysis, organizational change, and program evaluation. The thrust of the seminars is to define the issues, analyze trends, and explore possible approaches and techniques for solution.

Further information and application forms may be obtained from Douglas R. Brown, Director, Health Administrators Development Program, Malott Hall, Cornell University, Ithaca, New York 14850.

Hotel and Restaurant Administration

June 19-August 4

In 1922 Cornell University established, with the cooperation and financial assistance of the American Hotel Association, a four-year course in hotel administration for secondary 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 the Administrative Aide, Summer School of Hotel Administration, Statler Hall, Cornell University, Ithaca, New York 14850.

Human Ecology Unit Courses

Unit courses are offered by four departments of the College of Human Ecology. These courses are from two to three weeks duration and may be combined with unit courses offered by other departments or with independent study to provide a longer summer program. However, each unit course involves full-time participation for the designated period, and one course includes one week spent in New York City or Washington, D.C.

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

course. Further information and application forms can be obtained by writing to the address listed at the end of each course description.

Community Service Education

CSE 527u Working with the Aging (U,G)

Three hours credit. *July 17 to August 4.* Enrollment limited to 25 students. M T W Th F 9:30-12. MVR NG-6. Mrs. Mueller.

For students and practitioners concerned with the delivery of human services. Analysis of the needs of older persons in relation to social life space, physical living space and time; the role of community agencies in planning appropriate services to aging persons.

Program cost: \$105. Preregistration is required.

For further information and application forms write Miss Kathleen Rhodes, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

CSE 531u Understanding and Treating Drug Abuse (U,G)

Two hours credit. *July 3 to July 14.* Enrollment limited to 25 students. M T W Th F 9:30-10:55, and afternoons for field trips. MVR N225. Mr. Sorensen.

This course will deal with the misuse of both narcotic and non-narcotic drugs, and is intended principally for professionals such as teachers, nurses, social workers, clergymen and others who are working with young people. Films, lectures, discussions, and visits to drug treatment facilities will be included. Program Cost: \$70. Preregistration is required.

For further information and application forms write Professor Andrew Sorensen, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

CSE 591u Building Evaluation into Adult Education Programming (U,G)

Three hours credit. *June 12 to June 30.* Enrollment limited to 25 students. M T W Th F 9-12 and afternoons for individual and group work. MVR N225. Miss Boegly, Mr. Bruce, and Miss Noble.

A workshop designed for professionals involved in adult education programming. The need to strengthen the evaluation of adult education is an increasingly heard concern. Accountability is a necessary facet of developing responsible public education programs in the 1970s. This workshop will be concerned with psychological-educational measurement, behavioral objectives, characteristics of evaluation instruments, and means of collecting data for evaluative purposes. Participants will have opportunities to share experiences regarding the use of evaluation instruments and methods, as well as to work on an evaluative instrument for a particular program effort of their choice. A combination of lectures and ample opportunity for individualized work will be provided. (Also offered as Ed. 527u by Department of Education). Program cost: \$105. Preregistration is required.

For further information and application forms write Miss Boegly, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

Consumer Economics and Public Policy

CEPP 443u Social and Economic Effects of the Residential Environment (U,G)

Three hours credit. *July 24 to August 11.* Enrollment limited to 30 students. M T W Th F 9-12 and 1-4.

Miss Winter and Mr. Morris.

The purposes of this course are (1) to develop an understanding of the findings of selected man-environment research and their implications for social policy and (2) to develop an understanding of social science research methods in order to be able to critically evaluate research on the social effects of the housing environment.

The effects of the man-made physical environment on human behavior are currently being studied by sociologists, psychologists, architects, planners, and others. The amount of work already is considerable, but there is a need for taking stock of the state of the art (science?) and where it may be heading. The course will attempt such a stock-taking by assuming a critical stance toward all research in the area. It is hoped that not only will students gain knowledge about the area, but more importantly, will develop skills in reading and interpreting research findings. We expect to go well beyond the usual "read a lot and write a paper" kind of course. This will not be a lecture course; rather it will involve reading, interpretation, writing, and discussion of the research in a controversial area (physical determinism) that may stand or fall as a legitimate social science concept only on the basis of sound verified research. There is little room for ideology or armchair theory. Available to upperclassmen, graduate students, and others engaged in work in housing; including cooperative extension, college, and university teaching. The cost of tuition will be \$75 per credit hour, plus the \$5 per week General Fee.

Registration will be held July 24 at 9 a.m. in Martha Van Rensselaer Hall, Room 124.

For further information and application forms write to the Chairman, Consumer Economics and Public Policy, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

CEPP 535u Consumer in the Market (G)

Three hours credit. *July 3 to July 21.* Enrollment limited to 20 students. M T W Th F 9-12 and 1-4. MVR 124. Miss Bymers.

A workshop designed for college teachers of consumer problems who wish to gain a greater understanding of consumerism and its impact on the consumer goods market. Current developments in the consumer area, as well as product safety, advertising, credit, and regulatory arrangements in several consumer goods industries will be examined during an intensive two-week seminar on campus. In addition participants will be assigned to a one-week field trip to New York City or Washington, D.C., where participants will have an opportunity to visit various elements of the market and discuss consumer problems with representatives from industry and government.

This workshop is being developed in cooperation with several land-grant institutions and the consumer education division of a large national retail organization. Admission to the New York City portion of the program is limited. Applicants must have participated in the on-campus seminar and preference will be given to persons who are currently teaching in university or college programs. The cost of tuition will be \$75 per credit hour plus \$5 per week general fee for the two weeks on campus.

Participants are responsible for their own travel and maintenance in the field. Registration will be held on July 3 at 9 a.m. in Room 124, Martha Van Rensselaer Hall.

For further information and application forms write, Chairman, Consumer Economics and Public Policy, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

Design and Environmental Analysis

July 24–August 11

*DEA 440u Form Study: Materials (U,G)

Three hours credit. July 24 to August 11. M T W Th F 8:30–10, 1:30–5. Van Rensselaer B-41.

Miss Van Alstyne.

An introduction to working with plastic forms, utilizing the possibilities of clay and various processes of forming clay. Work is divided between working on the hand-building, along with simple glazing and firing techniques. Fee, \$20.

For further information and application forms write, Miss Jayne VanAlstyne, Design and Environmental Analysis, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

DEA 530u Science in the Near Environment for Consumers (G)

Three hours credit. July 24 to August 11. Registration limited to 20 students, minimum 10 students. M T W Th F 8:30–10 and 1:30–3. Van Rensselaer G-19.

Miss Purchase.

Principles of science applied to consumer interests in the near environment. Lectures, laboratory work, and readings on control of environmental conditions in dwellings, heat transfer, electricity in dwellings, chemistry of cleaning agents, characteristics of surfaces to be cleaned, mechanics of equipment. Planned for persons in consumer education including teachers, extension workers, home service personnel, consumer consultants, and social workers; also valuable for environmental designers and analysts.

For further information and application forms write, Miss E. Purchase, Design and Environmental Analysis, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

Human Development and Family Studies

June 28–July 12

HDFS 336u Methods and Materials Workshop for Teachers and Aides in Preschool Programs (U)

Three hours credit. June 28 to July 12. Limited to

24 students. S-U credit. M T W Th F 9–4, MVR 172. Mrs. Hemsath.

This is a workshop course for paraprofessionals and teachers of preschool children which will expose and involve the student in a variety of methods and creative uses of materials. It will cover such topics as setting up the learning environment, food in the classroom, science and nature study, music, props for language development, manipulative activities, numbers, and art. These topics will be explored through workshops, films, field trips, demonstrations, and discussion groups. Cost of the program for tuition and fees will be \$70 for the two weeks. Participants are accepted on a first-come basis. Registration will take place on June 28 at 9 a.m. in Martha Van Rensselaer Hall, Room 172.

For further information and application forms write Mrs. Sue Hemsath, New York State College of Human Ecology, Cornell University, Ithaca, New York 14850.

Summer Program in Marine Science

June 3–July 1

This four-week program is offered cooperatively by Cornell University, the University of New Hampshire, and the State University of New York, and carries transcript credit at the participating universities. It is presented at the Isles of Shoals, ten miles offshore on the Maine-New Hampshire line. Construction of the Shoals Marine Laboratory of Cornell University on Appledore Island began in 1971. However, the new facilities will not be completed in time for full use during the summer of 1972. Therefore instruction will be offered in 1972, as for the previous six years, in the conference center facilities on nearby Star Island and at the Durham campus and Jackson Estuarine Laboratory of the University of New Hampshire.

Living material and habitats are emphasized in introducing students to the major disciplines of oceanography and in rounding out the student's knowledge of these topics as presented at inland locations. Shipboard demonstrations are conducted of oceanographic tools and techniques, and the North Atlantic fisheries are examined with the participation of commercial trawlers and fishermen from the Gloucester fleet and the National Marine Fisheries Service.

The participating universities maintain or bring to the Isles of Shoals a wide range of oceanographic equipment and instruments, microscopes, and library resources to support demonstrations and exercises in marine biology, marine geology, and physical oceanography of the estuary and the continental shelf. Also included in the instructional program are diving, small boat handling, positioning, marine electronics, and other practical topics useful to marine scientists. A number of vessels are available by ownership or charter to serve the program. These include the 45-foot research vessel *Jere Chase* of the University of New Hampshire, two 35-foot

lobster boats, and several smaller boats. The program also makes use of the 65-foot island ferry, *Viking Star*, and, by arrangement with the National Marine Fisheries Service, the larger research vessels *Delaware II* and *Rorqual*. More than forty lecturers from academic institutions, marine industry, governmental agencies, and fishermen serve on the faculty.

Enrollment in this program may be limited. Expenses will total \$570. This covers tuition, fees, board, room, health insurance, and special transportation during the four-week period. Scholarship support is available. All application procedures are handled by Cornell University.

For further information and application forms, address the Director, Summer Program in Marine Science, Plant Science 202, Cornell University, Ithaca, New York 14850.

Biol. Sci. 364u Introduction to Marine Science (U,G)

Five hours credit. *June 3 to July 1*. Prerequisite: a full year of college biology. Daily lectures, laboratory, and field work. S-U grades only. Professor Kingsbury (in charge).

Institute for Administrators of Nursing Homes and Health Related Facilities

This program is designed to improve patient care by helping participants meet requirements for licensure as providers of care, coordinate their efforts with those of total health care systems, and explore community health resources.

Lectures and discussions will be offered on such topics as providing high quality patient care, meeting special needs of elderly patients, studying the changing picture in long-term care, working with other health institutions and agencies, and developing personnel programs. Directed field study will be conducted in related institutions and agencies. Interaction with consultants and participants on individual problems will be pursued.

Administrators of nursing homes and health related facilities with baccalaureate degrees are welcome to apply to the program. It is a noncredit course, but certificates of merit will be issued to all participants who satisfactorily complete the required work by the end of the program. The course has been approved by the New York State Board of Examiners of Nursing Home Administration as meeting the New York State requirement for a course in institutional administration.

Tuition will be approximately \$400. Registration will take place at the first class meeting, time and place to be announced. Mrs. Kathryn O. Visnyei is the director. For further information and application forms, write Institute for Administrators of Nursing Homes and Health Related Facilities, 257 Martha Van Rensselaer Hall, Cornell University, Ithaca, New York 14850.

Ornithology Field Seminar for Adults and Family Groups

July 2-8 and August 6-12

Two one-week, noncredit courses led by Peter Paul Kellogg, professor emeritus of ornithology and biological acoustics. Designed for the serious amateur ornithologist and bird lover, this program offers instruction in field observation, familiarization of some techniques used in field research, and acoustics. Lectures cover various aspects of the biology of birds including anatomy, classification, migration, orientation, behavior, ecology, and distribution.

Early morning and late afternoon field trips will emphasize observation and recording of bird sounds, as well as field natural history. Laboratory work will include familiarization with sound reproduction equipment in the Laboratory of Ornithology.

This special Summer Session program is being offered jointly with Cornell Alumni University. The tuition charge of \$150 per week per person includes room and board, all supplies, and course related materials. Participants are required to bring their own binoculars and field guide for birds.

Families are encouraged to attend, provisions will be made for children of all ages through the Cornell Alumni University Day Camp at a weekly fee of \$90 per child. However, qualified teenagers may be permitted to enroll in the course with their parents upon the approval of the instructor of their demonstrated interest in ornithology.

The course is limited to seventy-five persons per week with each individual being assigned to a section for field trips and laboratory work.

For further information and application forms write to the Dean of Summer Session, B-20 Ives Hall, or to Mr. G. Michael McHugh, Director, Cornell Alumni University, 431 Day Hall, Ithaca, New York 14850.

Graduate Work in Physics

June 14-August 11

Several graduate courses are being offered by the Department of Physics on an eight-week basis. Tuition and fees will be charged at the same rate as for the regular Summer Session (\$75 per credit hour for tuition, and \$5 per week general fee).

Registration will be held on June 14 at the Summer Session office, B-20 Ives Hall, at a time of day which does not interfere with attendance in class. The Summer Session office is open from 8 a.m. to 4:30 p.m. For further information and application forms write Director, Graduate Work in Physics, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

***Physics 500 Informal Graduate Laboratory (G)**

One to two hours credit. *June 14 to August 11*. Prerequisite: Physics 214L, 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 304.

This laboratory is associated with the Physics 510 laboratory; see topics listed under Physics 510, below. Physics 500 can also be taken in the six-week session, see p. 41. Fee, \$5 per credit hour.

***Physics 510 Advanced Experimental Physics (G)**

Three hours credit. *June 14 to August 11.* Prerequisites: Physics 410, or 500, and 443, or consent of the instructor. M T W Th F 2-5. Clark 308.

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.

Physics 574 Quantum Mechanics II (G)

Four hours credit. *June 14 to August 11.* Prerequisites: Physics 562, 572, and Math. 416, or consent of instructor. M T W Th F 11-12:15. Rockefeller 103.

Two additional hours each week to be arranged. 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.

Topics in Modern Physics for Talented High School Juniors

June 28-August 11

Topics in Modern Physics for Talented High School Juniors is a program supported by the National Science Foundation and designed for secondary school students who will have completed eleventh grade. It provides a superior opportunity in physics, in 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 interest in science, and
- (3) to provide a meaningful first exposure to the academic atmosphere of the college.

This program will not duplicate or take the place of any conventional college course, but it will supplement the secondary-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.

Brochures regarding this program were mailed in January, and the deadline has passed for requesting application forms for the 1972 program. Those interested in the 1973 program may receive further information by writing to Professor R. C. Richardson,

Director, Topics in Modern Physics, Clark Hall, Cornell University, Ithaca, New York 14850.

College-Preparatory Reading and Study Skills Program

July 3-August 4

This five-week program is designed to teach students the reading and study skills necessary for successful scholarship at the college level. It is intended for college-bound students who will have completed their junior or senior year of secondary school by June 1972. Registration will be limited; therefore, early applications are encouraged.

Students will meet daily, both mornings and afternoons, beginning Monday, July 3, and ending Friday, August 4. Additional work outside of class time is required each day.

The total charge to out-of-area students is \$550.

This covers room, board, tuition, and all fees including those for health services and student union privileges. Cost to commuting students is \$300, including tuition, textbooks and fees.

A preregistration deposit of \$50 is required following notification of acceptance. There are no scholarships offered in the program.

Students will live in a University dormitory facility reserved exclusively for the younger students. There will be one counselor to every ten to twelve students. Rules and regulations regarding residence halls, curfew, etc., are similar to those normally applying to college freshmen. Students are not allowed to have cars. Weekend commuting is discouraged, and no refunds are provided for meals not taken in the dormitory.

Students will be able to take advantage of the lectures, theatre presentations, and summer recreation facilities of the Ithaca area.

For application forms and additional information write: Sue Deffenbaugh, Director, Summer Reading Program, B-20 Ives Hall, Cornell University, Ithaca, New York 14850. Applications are due by June 1, 1972.

The Program

Reading. Flexibility in reading will be emphasized. Topics covered will include reading techniques for maximum comprehension, skimming and scanning, speed reading, the critical approach in reading essays, and many more techniques for situations unique to college study.

Writing. Emphasis will be placed on the writing of research and term papers. Each student will learn and apply the series of skills from the first step of selecting a topic to final step of typing the last revision. Such skills are an important factor in an individual's success in college courses.

Study Skills. Using actual Cornell classes as laboratory exercises, students will study and practice the art of listening and taking notes, of reading and remembering college assignments, and of organizing

time efficiently. In addition, other topics important to the successful student such as setting realistic goals and understanding the college experience will be explored.

Preparation for Examinations. Many students, although quite capable and knowledgeable, find that they are not able to write exams that reflect their true learning. Instructions will be given in preparing for exams and in the actual process of taking an exam; training will also be in the development of the skill of "test-wiseness"—the ability to cope with test-taking situations and to use the characteristics of tests to reach the full potential of one's knowledge and aptitudes. Emphasis will be placed on the standardized tests that students will be required to take in their senior or college years.

Listening Skills. "Effective Listening," a basic systems program, developed by the Xerox Corporation, will be the basis of the listening program. Practice and instruction in college situations will reinforce the principles presented in "Effective Listening."

Vocabulary and General Communication Skills. Vocabulary-building techniques will be discussed and practiced; in addition, the basic principles of organization of communication will be stressed.

Individual Work. If a student needs work in a specific area such as comprehension or spelling, an individualized program will be designed for him as part of his laboratory work.

Laboratory Work. Students will work daily in the reading laboratory to practice good reading techniques on reading machines which have proven to be instrumental in increasing both the rate of reading and the level of comprehension. Individual projects will also be completed in the laboratory sessions.

Continuing Education in Planning

June 12-16

The tenth annual offering of short courses is intended to serve the needs of laymen and professionals concerned with planning and related fields. No previous academic work is required.

The series will put special emphasis on the policy aspects of planning, including specific approaches and techniques. One hour of academic credit is allowed, with a certificate of completion being awarded. Tuition is \$75 for the one-week series, and a nonrefundable application fee of \$12 is required.

For further information and application forms, address Director, Extension Programs in Planning, B-38 Sibley Hall, Cornell University, Ithaca, New York 14850.

Southeast Asian Language Program

June 12-August 18

A program of intensive language instruction in Cambodian, Indonesian, Javanese, Thai, and

Vietnamese. Courses carrying twelve credit hours meet four hours per day in addition to regularly scheduled daily laboratory study. Courses carrying six or eight credit hours meet two hours per day and require a minimum of two hours per day of outside preparation, which may include laboratory study, depending on the course. Twelve credit hours is the maximum for which a student may register. Each course is the equivalent of one year of study in the regular academic-year course.

Tuition for the program is \$75 per credit hour. Fees amount to \$5 per week. For further information and application forms, write the Director, Southeast Asian Language Program, 108 Franklin Hall, Cornell University, Ithaca, New York 14850.

Cambodian

101-102 Elementary Cambodian (U,G)

Twelve hours credit. Mr. Huffman.

Indonesian

101-102 Elementary Indonesian (U,G)

Twelve hours credit. Mr. Wolff.

201-202 Intermediate Indonesian Reading (U,G)

Six hours credit. Mr. Stevens.

May be taken concurrently with 203-204. Courses 201 and 203 cover the first five weeks, courses 202 and 204 cover the second five weeks.

203-204 Intermediate Indonesian Composition and Conversation (U,G)

Six hours credit. Mr. Stevens.

May be taken concurrently with 201-202. See above.

Javanese

131-132 Elementary Javanese (U,G)

Six hours credit. Mr. Wolff.

Thai

101-102 Elementary Thai (U,G)

Twelve hours credit. Mr. Diller.

201-202 Intermediate Thai Reading (U,G)

Six hours credit. Mrs. Mendiones.

301-302 Advanced Thai Reading (U,G)

Eight hours credit. Mrs. Mendiones.

Vietnamese

101-102 Elementary Vietnamese (U,G)

Twelve hours credit. Mr. Huffman.

See also East Asian Language Program, p. 48.

Institute in Social Demography and Population Policy

June 26-August 4

The Institute is designed to provide an opportunity for twenty-five college and junior college teachers in

the social sciences with an opportunity to improve their knowledge of population dynamics in the United States and abroad. Instruction will be provided in social demography, techniques of demographic analysis, and the formulation of population policy. Attention will also be directed to problems of classroom instruction in demography and new approaches to curriculum design and teaching. Financial support for the Institute and its participants will be provided by the National Science Foundation.

The deadline for the 1972 program has already passed. Those interested in this program for 1973 may receive further information by writing to Professor Parker G. Marden, International Population Program, B-3 McGraw Hall, Cornell University, Ithaca, New York 14850.

Summer Studios in Art

See Summer Arts Festival, p. 62.

Teachers' Environmental Conservation Workshop

July 10-14

This is an intensive, one-week program designed to familiarize teachers with basic ecological and conservation principles through lectures, field trips, and evening programs. Teaching and field study methods will also be included. Field work will take place at Cornell's Arnot Forest Environmental Education area.

This year's workshop is open to teachers, grades seven through twelve. The cost per person is \$50; partial scholarships may be available from the New York State Conservation Council. Teachers may elect to take the workshop for one credit hour for an extra \$40, or the State Education Board has recommended two units of in-service credits for this type of program.

Deadline for applications is May 12, 1972. Please address inquiries to Professor Alexander Dickson, Teachers' Environmental Conservation Workshop, Fernow Hall, Cornell University, Ithaca, New York 14850.

Nat. Res. 210u Teachers' Environmental Conservation Workshop (G)

One hour credit. July 10 to July 14. Teachers of grades 7 through 12. Lectures, field studies, seminars. Mr. Dickson, director, assisted by other faculty.

Internship Program in Urban Planning and Development

June 26-August 18

This program involves a summer internship in the New York metropolitan area in public or private planning, housing, urban renewal, and development

agencies. Positions also available in various functional agencies dealing with transportation, recreation, water resources, etc., and there are occasional openings with citizen groups and private consulting firms. Participants are employed full-time at current salaries and attend evening lectures and discussions two evenings a week as part of the program. In addition, there are several field trips in the New York area and to other east coast cities. (The instruction period for the course in the New York program is limited to June 26 to August 18, 1972).

For further information address Professor Stuart W. Stein, Department of Urban Planning and Development, Sibley Hall, Cornell University, Ithaca, New York 14850.

UPD 672 Internship Program in Urban Planning and Development (G)

Three hours credit. June 26 to August 18. Open to graduate students in planning and others with permission. Mr. Stein, staff, and visiting lecturers.

Urban Planning Field Problem

June 28-August 11

During the summer a studio course of six credits will be offered. Students will work individually or in groups on the assigned projects, which will focus upon the nature and development of shopping and commercial facilities in Ithaca and Tompkins County. This research will include analytical investigation into the form and nature of commercial activity and will examine the historical setting; current legislative and zoning requirements; the developmental process; the relationship to economic base; the implications in services, transportation, and communication; as well as physical layout, landscaping, and design. The role of the citizen, the corporation, and the developer will be investigated, and the completed project will include graphic materials and a report. The work assignments will be determined after the first class meeting.

This course is offered primarily for Master of Regional Planning degree candidates in the Department of Urban Planning and Development, but is open to students in other departments at Cornell and to students in planning programs at other universities. Students are admitted by permission of the department. For further information address Professor M. Hugo-Brunt, Department of Urban Planning and Development, Sibley Hall, Cornell University, Ithaca, New York 14850.

UPD 442/542 Urban Planning Field Problem (U,G)

Six hours credit. Time and place of class meetings to be arranged.



Summer Arts Festival

The Summer Arts Festival provides courses of study in various creative arts for participants who desire to advance their knowledge in a particular discipline. The program of events provides the richest possible environment for students of the arts, members of the community, and visitors to this area.

Four workshops on creative writing are designed for aspiring as well as talented authors, poets, and playwrights. The Summer Concert Series presents talented, distinguished performers in six evening concerts. Young professional singers, joined by talented students and residents of the area, comprise the Cornell Chamber Chorale and will perform in one formal concert in addition to informal concerts and recitals.

A Photojournalism Workshop and a Workshop on Photographic Excellence encompass the entire realm of photography as a vocation. The Workshop on Photographic Excellence will give the beginning student an expansive background in technical photography. The Photojournalism Workshop is for persons experienced in photo mechanics and photographic excellence, who wish to expand into the field of photojournalism.

Studios in Art offers instruction in seven areas of the fine arts, taught by distinguished artists from the faculty of the department of Art. Exploring the Visual Arts, a program designed for high school juniors, is given in conjunction with Studios in Art. The EVA program is an in-depth introduction to both the formal and creative aspects of visual arts.

The Cornell Summer Repertory Theatre, composed of professional actors and student actors, will present a variety of perspectives on the modern and classic theatre. The Summer Dance Program, a workshop on dance, movement, and modern technique will be offered for a six-week period and can be taken noncredit, or, with special arrangements, college-level credit can be earned for the program.

In addition to the workshops, the concert series, and the summer theatre, scheduled throughout the Summer Session will be art exhibitions, lectures by prominent speakers on topics of vital interest to the

community, informal concerts and recitals, impromptu dance exhibitions, poetry readings, and a full schedule of films including many old favorites. The calendar of events in the Summer Session Weekly Bulletin will contain information on all events as they are scheduled during the summer.

Creative Writing Workshops

June 28–August 11

As part of the Summer Arts Festival, an expanded program of workshops in creative writing is being offered by eminently qualified teachers from the Department of English. The program is designed for students seriously interested in writing as a career and comprises four different workshops for the development of talent and skills in writing. One workshop is of an exploratory nature and covers poetry, fiction, and other allied forms; the second is a workshop for writers of narrative, short stories, novels, and other similar literary forms; the third is an advanced poetry workshop; and the fourth a workshop on playwriting.

Individuals interested in applying should use the application at the back of this *Announcement* and refer to the courses listed below. The Summer Session tuition of \$75 per credit hour and the \$5 per week general fee will apply. (See Tuition and Fees, pp. 11–12.)

Engl. 303 Creative Writing Workshop: Explorations (U,G)

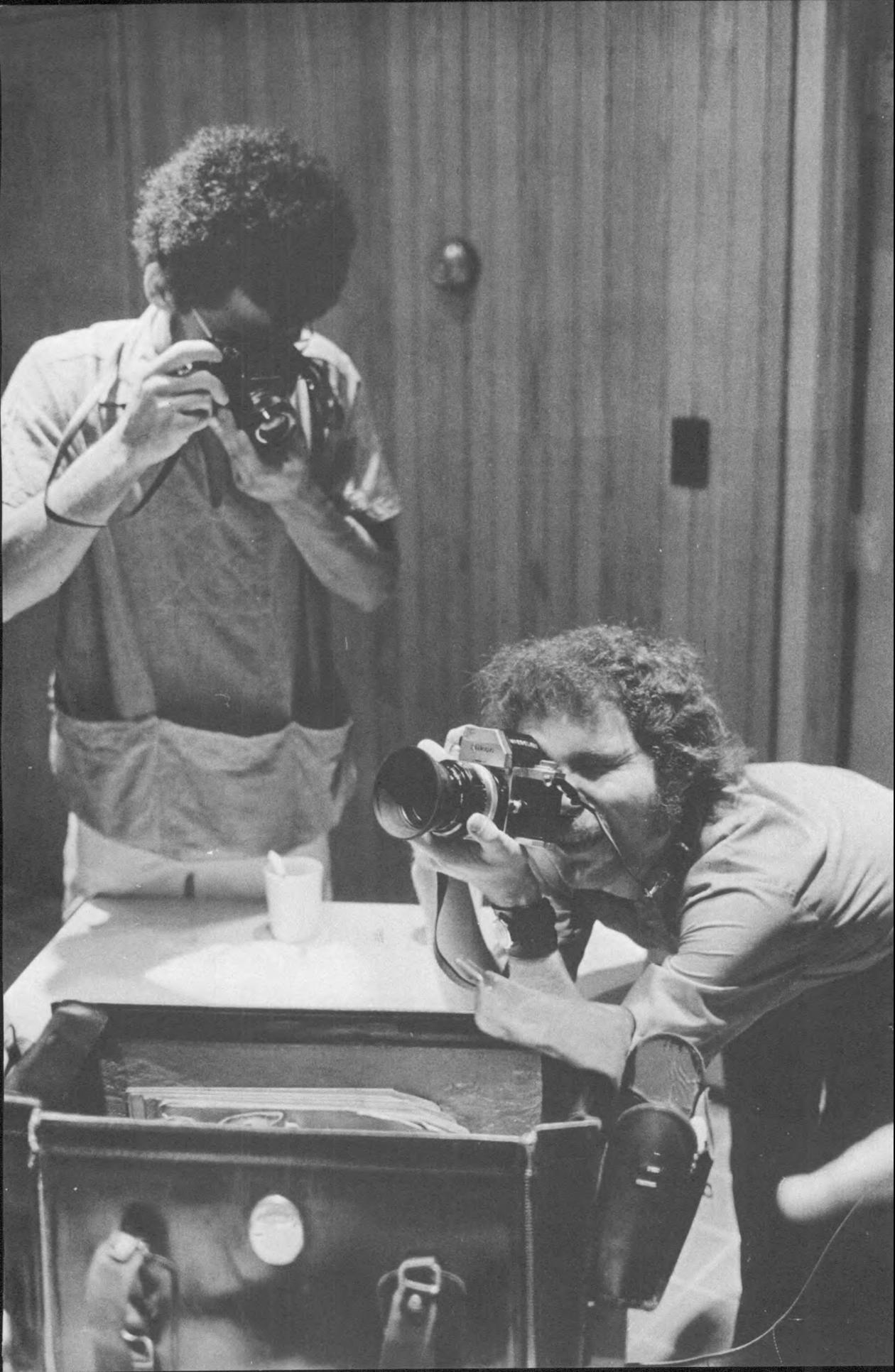
Four hours credit. M T W Th F 9:30–10:45. Goldwin Smith 246. Mr. Parrish.

A workshop for the development of talent and skills in the art forms of writing. Explorations for the bases of literary aesthetics. Practice in writing poetry, prose fiction, and allied kinds of writing. Participants will submit their own work for analysis in group discussion and in conference.

Engl. 385 Advanced Fiction Workshop (U,G)

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

A workshop for writers of narrative, of short stories,



novels, and allied forms, who are in need of development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference.

Engl. 387 Advanced Poetry Workshop (U,G)

Four hours credit. M T W Th F 9:30-10:45. Goldwin Smith 248. Mr. Morgan.

A workshop for poets in need of development beyond the exploratory stages of creative writing. Participants will submit their own work for analysis in group discussion and in conference.

Engl. 389 Playwriting (U,G)

Four hours credit. M T W Th F 3-4:15. Goldwin Smith. 246. Mr. Parker.

A workshop to consist of analyses of selected model plays, exercises in playmaking, and the reading and criticism of student work. Students need not have had any experience in playwriting, but they should have some familiarity with dramatic literature.

Music Program

Choral Music Program

July 9-23

A unique program in choral music provides gifted students and residents the opportunity to join with an ensemble of young professional singers in an intensive two-week institute of rehearsals, recitals, and concerts. Participants constitute the Cornell Chamber Chorale, which rehearses each afternoon and evening.

The Chorale presents a formal concert as part of the Summer Session Concert Series and three informal concerts. Several recitals will be given featuring the professional singers as soloists or in small groups. The repertory, selected from the gamut of choral literature, will emphasize music of Eastern Europe.

Admission to the Choral Music Program is by consent of the instructor, and inquiries should be addressed to Professor Thomas A. Sokol, Department of Music, Cornell University, Ithaca, New York 14850.

Participants in the Choral Music Program interested in earning college-level credit may register for the following course:

Music 464u Choral Style (U,G)

Two hours credit. July 9 to July 23. Consent of instructor required. Su M T W Th F 4-5:30, 7:30-9 p.m. S 1-3:30 p.m. Barnes Hall Auditorium. Mr. Sokol. A practical study of choral performance style.

Summer Session Concert Series

A program of evening concerts by distinguished artists is presented for the enjoyment of the Summer Session participants and members of the Ithaca community. The concerts will be held at 8:15 in the Alice Statler Auditorium on five consecutive Thursdays. Concert series tickets will be available for purchase at Barton Hall on registration day. For

additional information contact Professor Malcolm Bilson, Department of Music, 125 Lincoln Hall, Cornell University, Ithaca, New York 14850.

- July 6 Susan Davenney, soprano
Yehudi Wyner, piano
German and French art Songs
- July 13 Sonya Monosoff, baroque violin
James Weaver, harpsichord
Violin-harpsichord sonatas on Biber and Bach
- July 20 Cornell Chamber Chorale
Thomas Sokol, director
- July 27 Enid Katahn, pianist
- August 3 Deane-Drinkall Duo, violin and cello
assisted by Malcolm Bilson, piano

In addition to the above series of concerts, an organ recital will be presented by Donald R. M. Paterson, University Organist, on Sunday, July 23, at 8:15 p.m. in the Anabel Taylor Chapel.

Photography Workshops

Workshop in Photographic Excellence

July 10-21

A noncredit workshop for persons interested in acquiring a complete technical background in the field of photography. This is an intensive learning experience covering all facets of photographic excellence, and requires approximately twelve hours a day of concentrated time and effort. The only other prerequisite is a good 35 mm camera and some experience in its use. Special film, enlarging paper, and chemicals will be supplied and darkroom facilities provided.

The lectures and demonstrations given will cover various topics in each of the following areas: photographic systems, the chemistry of photography, the photographic print, photographic composition, people pictures, exposure meters, available light, close-ups, and the great outdoors. An expert from a custom printing house will be invited to the lecture and demonstrate custom printing techniques. The workshop will be directed by Russell C. Hamilton of the Office of Public Information—Visual Services at Cornell.

Program cost is \$175, which includes tuition, all fees, special supplies, and darkroom facilities. Enrollment is limited to thirty participants.

For further information and applications write, Photographic Excellence Workshop, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Photojournalism Workshop

July 24-August 4

A noncredit workshop for persons experienced in the fields of photo mechanics and photographic excellence, who desire to expand their knowledge to en-

compass the applications of photography to the narrative significance of photojournalism. Applicants must have already achieved printing and developing skills, as no darkroom facility will be provided.

The group will be given individual specific assignments and film, and contact sheets from all negatives will be analyzed. Each individual will select negatives to be made into slides. An editor from a progressive newspaper, as visiting faculty, will criticize the projected slides for the class. It is planned to give assignments twice during the workshop. A leading photojournalist, as guest lecturer, will spend a day with the class discussing various types of assignments and demonstrating his personal working technique in the field. The workshop will be directed by Russell C. Hamilton, of the Office of Public Information-Visual Services at Cornell.

Program cost is \$175, which includes tuition, all fees, and special supplies. For further information and application write, Photojournalism Workshop, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Studios in Art

June 26-August 4

The contribution of the Department of Art to the Summer Arts Festival is a program of courses in painting, drawing, sculpture, graphics, photography, and multi-media, designed for students at all levels of experience. Classes are kept small in number and afford ample opportunity for personal communication with instructors and fellow students, and will allow participants to work at their own pace.

Courses in the above arts are available in each of three two-week periods: June 26-July 7, July 10-21, and July 24-August 4. Each two-week course carries one hour of college-level credit.

The staff will consist of prominent members of the Cornell faculty and visiting artists. Painting will be taught by Jack Bosson, Norman Daly, Friedel Dzubas and Kenneth Evett. Jack Squier will teach sculpture. Instruction in silkscreen printing and a course in life drawing will be given by Steve Poleskie. Arnold Singer will teach a course in lithography. Courses in photography and multi-media will be offered by Eddie Johnson.

Tuition is \$75 per credit hour plus \$5 per week for the general fee. For a copy of the Studios in Art brochure and application write to the Director, Summer Studios in Art, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Exploring the Visual Arts for High School Juniors

July 3-August 4

The EVA program, given in conjunction with the Summer Studios in Art, is a noncredit fine arts course designed for qualified high school students who will

have completed their junior year in June 1972. Lecture classes combined with studio work give the participants an in-depth introduction to both the formal and creative aspects of visual arts. Students who plan to pursue art in college as well as those students who wish only to investigate the fine arts will find the course of study valuable.

The faculty will include Norman Daly, resident professor of art; Richard Rutkowski and Donald Queen, visiting instructors.

Forming Judgments in Art

This course will present, through slides and discussions, a study of the formal use of visual elements in historical and contemporary art. Students will be encouraged to use this survey as a basis for individual work. Studio classes in two-dimensional and three-dimensional art forms, sculpture, and graphics studios in serigraph and intaglio printmaking will stress materials and techniques needed for proficiency in these areas. Scheduled free studio time will enable each student to develop an individual approach to his assigned projects.

Field trips to museum exhibitions, outdoor recreational trips, and campus activities round out the program.

Inquiries and requests for application forms should be addressed to Summer Art Studios, Coordinator of High School Program, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Summer Theatre

The summer program of the Department of Theatre Arts is organized to present a variety of perspectives on the modern and classic 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.

The Cornell Summer Repertory Theatre is composed of professional actors and graduate and undergraduate student actors under the direction of the University Theatre staff. Among the plays presented by this company in past seasons have been *The School for Scandal*, *The Hostage*, *The Cherry Orchard*, and Feydeau's *Look, Don't Walk Around Naked*.

For further information write to Professor James H. Clancy, Lincoln Hall, Cornell University, Ithaca, New York 14850.

The courses listed below are offered by the Department of Theatre Arts during the summer. Complete descriptions of them can be found on p. 43.

Th. Arts 280 Beginning Acting (U,G)

Th. Arts 300 Directed Studies (U,G)

Th. Arts 335 American Drama and Theatre (U,G)

Summer Dance Program

June 28–August 11

The six-week Summer Dance Program, presented by the department of Theatre Arts, will include daily modern technique classes on three levels, and, if there is sufficient demand, a fourth class which will offer opportunities for improvisation, composition, and rehearsal.

Although presentation of a formal concert is not an objective of the program, performing opportunities may be provided in studio performances or other informal situations.

The classes will be taught by two members of the Cornell dance faculty, and a guest artist.

The dance courses are noncredit. However, an individual who desires to receive academic credit for dance may register for Theatre Arts 300, Directed Studies. Enrollment in this course and number of credits to be earned must then be arranged with the course instructor. Formal registration is required of all participants, either on a noncredit or a credit basis.

For information and applications, write Summer Dance Program, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

Faculty and Administration

University Administration

Dale R. Corson, President of the University
Robert A. Plane, University Provost
W. Donald Cooke, Vice President for Research
Lewis H. Durland, University Treasurer
William D. Gurowitz, Vice President for Campus Affairs
W. Keith Kennedy, Vice Provost
Samuel A. Lawrence, Vice President for Administration
E. Hugh Luckey, Vice President for Medical Affairs
Thomas W. Mackesey, Vice President for Planning
Paul L. McKeegan, Director of the Budget
Arthur H. Peterson, University Controller
Richard H. Ramin, Vice President for Public Affairs
Robert F. Risley, Vice Provost
Neal R. Stamp, Secretary of the Corporation and University Counsel

Administrative Board

Martin W. Sampson, M.S., Dean, Division of Summer Session and Extramural Courses; Director, Division of Unclassified Students; and Associate Professor, Industrial Engineering and Operations Research
Barry B. Adams, Ph.D., Chairman of Department and Associate Professor of English
James H. Clancy, Ph.D., Chairman of Department and Professor of Theatre Arts
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Herbert L. Everett, Ph.D., Director of Resident Instruction, College of Agriculture and Life Sciences, and Professor of Plant Breeding
Norman Penney, J.D., Dean of the University Faculty, and Professor of Law
Thomas A. Ryan, Ph.D., Professor of Psychology
Howard G. Smith, Ph.D., Professor of Electrical Engineering

Summer Resident Faculty

Jerry Amaldev, Teaching Fellow in Department of Music
Howard G. Andrus, Ph.D., Director, Guidance and Testing Center; Professor of Guidance and Personnel Administration
Joe P. Bail, Ph.D., Professor of Agricultural and Occupational Education
Anthony Grant Barrand, B.A., Lecturer in Psychology
LeGrace Benson, M.F.A., Assistant Professor of History of Art; Instructor in Female Studies
Philip L. Bereano, M.R.P., Assistant Professor of Environmental Engineering
Donna C. Bergmark, M.A., Lecturer in Computer Science
Arthur L. Berkey, Ph.D., Assistant Professor of Agricultural and Occupational Education
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C. Arthur Bratton, Ph.D., Professor of Farm Management
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Gwen J. Bymers, Ph.D., Professor and Chairman of Consumer Economics and Public Policy
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Marvin A. Carlson, Ph.D., Associate Professor of Theatre Arts
Michael J. Colacurcio, Ph.D., Associate Professor of English
Bart J. Conta, M.S., Professor of Mechanical Engineering

- Norman D. Daly, M.A., Professor of Art
- Roger Keith Dennis, Ph.D., Assistant Professor of Mathematics
- Anthony V. Diller, M.A., Lecturer in Linguistics
- Robert E. Doherty, Ed.D., Professor of Industrial and Labor Relations
- Friedel Dzubas, Visiting Critic in Art
- Joan R. Egnor, Ed.D., Associate Professor of Educational Administration
- Charles E. Elliott, Ph.D., Assistant Professor of Linguistics
- Andrew C. Eustis, Lecturer in Psychology
- Chestyn Everett, A.M., Assistant Professor of Black Theatre Arts, Africana Studies and Research Center
- Robert W. Everett, Ph.D., Assistant Professor of Animal Science
- Kenneth W. Evett, M.A., Professor of Art
- Ephim G. Fogel, Ph.D., Professor of English
- Neal James Friedman, Ph.D., Assistant Professor of Mathematics
- Lois Gosse, Ph.D., Acting Assistant Professor of Economics
- Susan A. Graetz, B.A., Lecturer in Psychology, Instructor in Female Studies
- Joan M. Griffiths, Ph.D., Instructor in Biochemistry and Molecular Biology
- Leopold W. Gruenfeld, Ph.D., Professor of Industrial and Labor Relations
- Emil J. Haller, Ph.D., Associate Professor of Educational Administration
- Dalva E. Hedlund, Ph.D., Assistant Professor of Occupational Psychology and Guidance, Education
- Sue A. Hemsath, Instructor in Human Development and Family Studies
- Charles R. Henderson, Ph.D., Professor of Animal Science
- Neil W. Henry, Ph.D., Assistant Professor of Sociology
- Lawrence B. Hixon, Ed.D., Professor of Education
- Howard C. Howland, Ph.D., Assistant Professor of Neurobiology and Behavior
- Kathryn P. Immler, Lecturer in Psychology
- Lowell Johnson, M.A., Teaching Assistant in Economics
- Eleanor H. Jordan, Ph.D., Professor of Linguistics
- C. Kristofer Jorstad, B.A., Assistant Professor of English
- Peter J. Kahn, Ph.D., Associate Professor of Mathematics
- Amoz Kats, Ph.D., Assistant Professor of Economics
- Michael W. Kaufman, Ph.D., Assistant Professor of English
- Dennis Kelly, Instructor in History
- William J. Kennedy, Ph.D., Assistant Professor of Comparative Literature
- Nancy Helen Kerr, Lecturer in Psychology
- Herbert L. Kufner, Ph.D., Professor of Linguistics
- Fred G. Lechner, D.Ed., Associate Professor of Agricultural Engineering
- Richard L. Leed, Ph.D., Professor of Linguistics
- John M. Lewis, B.A., Lecturer in Government
- Johannes F. Linn, M.A., Lecturer in Economics
- Barbara Susan Long, B.A., Lecturer in Psychology
- Anthony G. Lozano, Ph.D., Assistant Professor of Linguistics
- William F. Lucas, Ph.D., Director, Center for Applied Mathematics; Professor of Operations Research and Applied Mathematics
- Ronald D. Mack, Ph.D., Assistant Professor of Psychology
- Phillip L. Marcus, Ph.D., Assistant Professor of English
- John McCoy, Ph.D., Associate Professor of Linguistics
- H. Scott McMillin, Ph.D., Assistant Professor of English
- Ruchira Mendiones, Ph.D., Lecturer in Thai
- Marshall W. Meyer, Ph.D., Assistant Professor of Industrial and Labor Relations and Sociology
- Andrew J. Milnor, Ph.D., Assistant Professor of Government
- Kathryn M. Moore, Assistant Professor of Guidance and Personnel Administration, Education
- Robert Morgan, M.F.A., Lecturer in English
- Earl W. Morris, Ph.D., Assistant Professor of Consumer Economics and Public Policy
- Roger A. Morse, Ph.D., Professor of Apiculture, Department of Entomology
- Steven S. Muchnick, M.A., Lecturer in Computer Science
- Jeanne Mueller, Ph.D., Associate Professor of Community Service Education
- Tendai L. Mutunhu, M.A., Assistant Professor of African History
- A. Leslie Neal, Ph.D., Associate Professor of Biochemistry and Molecular Biology
- George L. Nemhauser, Ph.D., Professor of Operations Research
- Anil Nerode, Ph.D., Professor of Mathematics
- Lucinda A. Noble, Ph.D., Associate Professor of Community Service Education
- James S. Noblitt, Ph.D., Associate Professor of Linguistics
- Henry Okun, M.A., Assistant Professor of History of Art

Stephen M. Parrish, Ph.D., Professor of English
 Donald R. M. Paterson, M. Mus., Assistant Professor of Music
 Bertel Pedersen, Ph.D., Assistant Professor of Comparative Literature
 Richard A. Platek, Ph.D., Associate Professor of Mathematics
 Steve Poleskie, B.S., Assistant Professor of Art
 Paul John Poppen, Lecturer in Psychology
 Mary E. Purchase, Ph.D., Associate Professor of Design and Environmental Analysis
 Leonard Reissman, Ph.D., Professor of Sociology
 George S. Rinehart, Ph.D., Associate Professor of Mathematics
 Edgar Rosenberg, Ph.D., Professor of English and Comparative Literature
 Oscar S. Rothaus, Ph.D., Professor of Mathematics
 Arthur W. Rovine, L.L.B., Ph.D., Assistant Professor of Government
 John F. Scott, Ph.D., Assistant Professor of History of Art
 Ellen C. Seaburg, B.S., Lecturer in Hotel Administration
 Alain Sez nec, Diplome d' études supérieures, Professor of Romance Studies
 Arnold Singer, Associate Professor of Art
 David A. Singer, Ph.D., Assistant Professor of Mathematics
 S. K. Singh, Associate Professor of Economics
 Thomas A. Sokol, M.A., Professor of Music
 Andrew Sorensen, Ph.D., Assistant Professor of Community Service Education
 Jack L. Squier, M.F.A., Professor of Art
 Stuart W. Stein, M.C.P., Professor and Chairman of Urban Planning and Design
 William A. Stini, Ph.D., Associate Professor of Anthropology
 Allen L. Tan, Lecturer in Psychology
 James Tate, Jr., Ph.D., Assistant Director, Ornithology, Associate Professor of Natural Resources
 Alberto Torchinsky, Ph.D., Assistant Professor of Mathematics
 M. Jayne Van Alstyne, B.F.A., Assistant Professor of Design and Environmental Analysis
 L. Dale Van Vleck, Ph.D., Associate Professor of Animal Science
 Thomas T. H. Wan, Ph.D., Visiting Assistant Professor of Sociology
 Richard Warren, B.A., Lecturer in Psychology
 James E. West, Ph.D., Assistant Professor of Mathematics

Meredith West, B.A., Lecturer in Psychology
 Winthrop Wetherbee, Ph.D., Assistant Professor of English
 L. Pearce Williams, Ph.D., John Stambough Professor of History, Professor of History of Science
 Mary Winter, Ph.D., Assistant Professor of Consumer Economics and Public Policy
 John U. Wolff, Ph.D., Associate Professor of Linguistics
 Bryon Yaffe, L.L.B., Assistant Professor of Industrial and Labor Relations
 Kathryn E. Yoselson, B.A., Lecturer in Psychology

Summer Guest Faculty

Carl Baar, Ph.D., Professor of Government, Yale University
 Paul C. Berg, Ph.D., Director of Reading Clinic, Professor of Education, University of South Carolina at Columbia
 Clyde W. Bresee, Ph.D., Director of Guidance, Athens Area Schools, Athens, Pennsylvania
 Richard M. Campbell, Ph.D., Assistant Professor of Philosophy, Dalhousie University, Halifax, Nova Scotia, Canada
 Franklin E. Huffman, Ph.D., Assistant Professor of Southeast Asian Languages, Yale University
 Michael A. Lasorte, Ph.D., Associate Professor of Sociology, State University of New York at Brockport
 Philip Lewin, Ph.D., Director of Guidance, Ithaca City Schools
 Carol McFadden, M.A.T., Visiting Lecturer in Neurobiology and Behavior
 Alexei A. Panshin, M.A., Author of science fiction
 Stewart Parker, M.A., Visiting Writer and Lecturer, Belfast, Ireland
 Steven Piker, Ph.D., Associate Professor of Anthropology, Swarthmore College, Pennsylvania
 George J. Posner, Ed.D., Associate Professor of Education, State University of New York at Albany
 Donald Queen, B.F.A., Visiting Instructor in Art
 Richard Rutkowski, M.A., Visiting Instructor in Art
 Peter Slater, Ph.D., Assistant Professor of History, Dartmouth College, Hanover, New Hampshire
 Roger M. Smith, Ph.D., Program Adviser, Southeast Asian Studies, Ford Foundation, Bangkok
 Alan M. Stevens, Ph.D., Associate Professor of Linguistics, Queens College, New York
 Joseph G. Woodsworth, Ed.D., Professor and Head, Department of Educational Psychology, University of Calgary, Alberta, Canada

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Cornell University Announcements

The *Cornell Announcements* are designed to give prospective students and others information about the University. The prospective student should have a copy of the *Announcement of General Information*; after consulting that, he may wish to write for one or more of the following *Announcements*:

New York State College of Agriculture and Life
Sciences
College of Architecture, Art and Planning
College of Arts and Sciences
Department of Asian Studies
Field of Education
College of Engineering
School of Hotel Administration
New York State College of Human Ecology
New York State School of Industrial and Labor
Relations
Officer Education (ROTC)
Summer Session

Undergraduate preparation in a recognized college or university is required for admission to certain Cornell divisions, for which the following *Announcements* are available.

Graduate School
Graduate School: Course Descriptions
Law School
New York State Veterinary College
Graduate School of Business and Public
Administration
Graduate School of Nutrition
Medical College (New York City)
Cornell University–New York Hospital School of
Nursing (New York City)
Graduate School of Medical Sciences
(New York City)

Requests for the publications listed above may be addressed to

CORNELL UNIVERSITY ANNOUNCEMENTS
Edmund Ezra Day Hall
Ithaca, New York 14850

(The writer should include his zip code.)

Application Instructions

Please complete both sides of the application form below; be sure to give all information requested.

A \$10 nonrefundable application fee is required of all applicants (except matriculants of Cornell University as undergraduate or graduate degree candidates) and must accompany this application. Checks should be made payable to Cornell University. Mail the application, together with the \$10 fee, to the Dean of Summer Session, B-20 Ives Hall, Cornell University, Ithaca, New York 14850.

If possible, applications should be submitted prior to June 19. Applications will be accepted up to registration day (June 28) but registration material will not be mailed out after June 19 and a place in class cannot be guaranteed. Late applicants should pick up their registration material at Barton Hall on June 28. Priority for individual course enrollment is established by the order in which applications are received. For additional information see pp. 7-8.

Course Program

Each applicant should list the courses he wishes to take in the space provided on the application form below. The courses must be selected from this *Announcement*. Programs of more than eight credit

hours must be approved by the dean of Summer Session.

Undergraduate applicants are urged to consult the appropriate officials in their own colleges in planning their course programs to ensure that the credit they earn will be accepted toward their degree programs. Students lacking necessary prerequisites will be admitted to courses only by special permission of the course instructor.

For Cornell Undergraduates Only

Applicants who are enrolled in, or have been admitted to, Cornell University must have the statement of approval which appears on the application form below signed by the appropriate University official (see p. 9 for approved list). This applies only to undergraduate degree candidates and is not required of graduate students.

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.

Please tear along perforations

Application for Admission
Cornell University Summer Session 1972
June 28-August 11

Mr. _____
Mrs. _____
Miss _____
last name first name middle name

Check address to be used after the end of spring term.

Present address _____
street and number
city state zip

Home address _____
street and number
city state zip

Country of citizenship _____

COMPLETE THE OTHER SIDE OF THIS APPLICATION IN FULL.

Leave the following spaces blank:

Rcvd. _____	Rec'd. _____	Sent _____
\$10 fee: rec'd _____ not required _____		

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Tear along perforations

I am enrolled in _____
college/university

as a candidate in good standing for the _____ degree.

I am a high school graduate accepted for admission
to _____
college/university

I am not a full-time student.
school last attended _____ date _____

number of years of college completed _____ degree (if any) _____

present employer _____

position held _____

List your complete program indicating the departmental abbreviation, course number, course title, credit hours, and class meeting times (if listed).

Dept. Abbrev.	Course No.	Title of Course	Credit Hours	Meeting Time

REGISTRATION APPROVAL: FOR CORNELL UNDERGRADUATES ONLY	
Signature of College Official	Official Title