



Cornell University

Announcements

College of
Architecture, Art,
and Planning

1971

CORNELL UNIVERSITY ANNOUNCEMENTS

Volume 62 of the Cornell University Announcements consists of twenty-three catalogs, of which this is number 18, dated October 14, 1970. Publication dates: twenty-three times a year (four times in August and October; three times in March; twice in June, July, September, and November; once in January, April, May, and December). Publisher: Cornell University, Sheldon Court, 420 College Avenue, Ithaca, New York 14850. Second-class postage paid at Ithaca, New York.

Cornell University

College of
Architecture, Art,
and Planning

1971

Cornell Academic Calendar

1970-71*

Registration, new students	Th, Sept. 10
Registration, continuing and rejoining students	F, Sept. 11
Fall term instruction begins, 7:30 a.m.	M, Sept. 14
Citizenship recess:	
Instruction suspended, 1:10 p.m.	S, Oct. 24
Instruction resumed, 7:30 a.m.	Th, Nov. 5
Thanksgiving Day, a holiday	Th, Nov. 26
Christmas recess:	
Instruction suspended, 4:30 p.m.	T, Dec. 22
Instruction resumed, 7:30 a.m.	M, Jan. 4
Fall term instruction ends, 1:10 p.m.	S, Jan. 9
Independent study period begins, 2:00 p.m.	S, Jan. 9
Final examinations begin	W, Jan. 13
Final examinations end	W, Jan. 20
Interession begins	Th, Jan. 21
Registration, new and rejoining students	Th, Jan. 28
Registration, continuing students	F, Jan. 29
Spring term instruction begins, 7:30 a.m.	M, Feb. 1
Spring recess:	
Instruction suspended, 1:10 p.m.	S, Mar. 27
Instruction resumed, 7:30 a.m.	M, Apr. 5
Spring term instruction ends, 1:10 p.m.	S, May 15
Independent study period begins	M, May 17
Final examinations begin	M, May 24
Final examinations end	T, June 1
Commencement Day	M, June 7
Eight-week Summer Session registration	M, June 21
Eight-week Summer Session begins	M, June 21
Six-week Summer Session registration	W, June 30
Six-week Summer Session begins	Th, July 1
Summer Session examinations begin	Th, Aug. 12
Summer Session examinations end	F, Aug. 13
Summer Session ends	F, Aug. 13

* The dates shown in the Academic Calendar are subject to change at any time by official action of Cornell University.

Contents

ACADEMIC CALENDAR	2
CORNELL UNIVERSITY	5
THE COLLEGE OF ARCHITECTURE, ART, AND PLANNING	6
ARCHITECTURE	8
Undergraduate Program	8
Graduate Study	11
Urban Design	11
Architectural Science	12
Architectural History	13
Courses of Instruction	14
ART	19
Undergraduate Program	19
Graduate Study	21
Courses of Instruction	22
CITY AND REGIONAL PLANNING	25
Master of Regional Planning	26
Doctor of Philosophy	27
Courses of Instruction	28
GENERAL INFORMATION	36
Undergraduates	36
Admission and Related Information	37
Expenses	39
Summer Session	39
Scholarships, Fellowships, Medals and Prizes	40
Graduate Students	43
Admission and Related Information	43
Financial Assistance	46
FACILITIES AND SERVICES	47
ADMINISTRATION AND FACULTY	50
STUDENT BODY	52
MAP	53
LIST OF ANNOUNCEMENTS	54

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.



Cornell University

Cornell University owes its existence to the Morrill Act of 1862 and to the vision, energy, and generosity of two men—Ezra Cornell and Andrew Dickson White. Under the Morrill Act, the State of New York received from the federal government a substantial grant of western lands to be used for the support of colleges teaching agriculture and the mechanic arts. Cornell and White, serving together in the New York Senate, conceived the idea of using the land grant for the establishment of a single great nonsectarian institution where the humanities and sciences would be taught, as well as agriculture and the “mechanic arts,” and where all studies would be on an equal footing.

In addition to this idea, which was revolutionary at the time, the original plan of the University contemplated the admission of women to all areas of instruction. This too was an innovation in the pattern of higher education in America.

Ezra Cornell, the successful man of business, and Andrew D. White, the scholar, devoted their lives and talents to the realization of these ideals. White became the new University's first President and Cornell its principal benefactor.

The site chosen, high on a hill overlooking Cayuga Lake and Ithaca, has been expanded through the years, and Mr. Cornell's hilltop farm has become the heart of the beautiful campus from which generations of students have watched the sun set behind West Hill, across the valley.

Cornell University now comprises twelve schools and colleges in Ithaca and the Medical College and School of Nursing in New York City. Some of the divisions of the University are supported by the state of New York. Others, including the College of Architecture, Art, and Planning, are privately endowed. Cornell University is unique in its combination of both public and private support.

The composition of the student body reflects the cosmopolitan character of the University. At Cornell there are students from all backgrounds, from all parts of the world, representing all races, all creeds. Students of architecture, art, and planning associate in the classrooms, in the dormitories, and in student organizations with those studying, for example, agriculture, industrial and labor relations, or the humanities, to the advantage of all. From this close association with persons of diverse cultures and interests, students at Cornell learn lessons of understanding and tolerance that cannot be taught in the classroom or laboratory.

The College of Architecture, Art, and Planning

At Cornell, from the first, there was a place in the University system for a school of architecture. A modest department was established in 1871, three years after the University opened. It was fortunate to have President White himself for a patron. He had cultivated an intelligent interest in architecture from boyhood, as he records in his autobiography, and during journeys abroad his "pet extravagance" had been the collection of books and other material relating to it. He gave the new department all that he had accumulated—a large architectural library and several thousand architectural photographs, drawings, casts, models, and other items from all parts of Europe—a collection then almost unique. His gift formed the nucleus of an increasingly useful library and store of illustrative equipment.

In the course of time, as the University perfected its organization, the department became the College of Architecture. A Department of Art, organized in 1921, has played an increasingly important part in the College and in the life of the University. In recognition of the growing importance of urban planning, a Department of City and Regional Planning was established in 1935.

In 1967, to reflect the independent strength of its three programs, all three were made separate departments, and the name of the College was changed to the College of Architecture, Art, and Planning.

The College offers two programs leading to the Bachelor's degree—the five-year program in architecture which leads to the degree of Bachelor of Architecture, and the four-year program in art which leads to the degree of Bachelor of Fine Arts. These two programs have entirely different objectives. They are described in detail later.

The faculty of the College, acting as a division of the Graduate School, has jurisdiction over the following advanced professional degrees: Master of Architecture, Master of Regional Planning, and Master of Fine Arts.

Programs in the major field of study are offered in the College for the following degrees over which the Graduate School has jurisdiction: Architectural Sciences, M.S.; History of Architecture and Urban Development, M.A. and Ph.D.; City and Regional Planning, Ph.D.

Students in each of these programs, working in physical proximity to each other, gain a broader understanding of their own special area of interest through close contact with the students and teachers in other disciplines.

As early as 1922 the College set a limit to the number of its students and devised a selective method of admission. It now enrolls about 465 students and has a full-time teaching staff of about fifty, supplemented by visiting teachers and part-time lecturers and assistants. Teachers and students in such proportion mix together freely, and instruction and criticism are on an individual basis.

The courses in the College are planned as carefully integrated parts of a professional curriculum, with fundamental subjects given within the College by men reflecting the professional point of view. The tradition is one of long hours and high devotion.

The professional concentration of the courses within the College is balanced by the breadth of view gained from the rest of the University. The College is convinced that this breadth is an essential element of education, and that all professionals must also be educated persons. This conviction may be reflected to some extent in the catalog of elective courses taken outside the College, but it runs much deeper than that, influencing the form of the curriculum, the methods of teaching, and the entire extracurricular life of teacher and student alike.

Architecture

Undergraduate Program

The program of study which leads to the degree of Bachelor of Architecture takes five years and is designed to afford both the technical and the cultural foundation for professional work. It recognizes the dependence of the profession of architecture not only upon technical skill but also upon a cultivated taste and a creative imagination, emphasizing the architect's obligation to society as well as to the client.

The architect today must be a person of many talents. He must be a scientist and an artist, an engineer and an inventor; he must also be a manager and cooperate with experts in many other fields. Above all, he should have a broad understanding of fundamental human values and social problems.

The five-year—ten-term curriculum in architecture outlined in the following pages includes a thorough training in the basic skills and intellectual disciplines needed by the architect. In addition, the student is expected to enlarge his understanding of the liberal arts and sciences through elective courses chosen in consultation with his faculty adviser. In all, about one-quarter of the student's program is devoted to academic courses in the liberal arts. Each graduating student must have taken courses in each of three broad areas of study generally described as history, English, and other humanities; social sciences; and biological and physical sciences and mathematics.

Following a concentration of professional requirements within the first three years, the curriculum opens the last two years largely to elective courses, both within and outside the College. The student who wishes to explore in greater depth certain aspects of materials, architectural science, history, city planning, urban design, or the fine arts may devote a substantial number of advanced electives to his field of special interest.

The curriculum is conceived as a fundamental program in architectural training. There are no specialized options, although variation in the basic program is permitted by the electives.

Among the courses leading to the degree of Bachelor of Architecture, design is the most basic and has the greatest number of hours allotted to it. It is in the sequence of design courses that the student is expected to demonstrate his ability to solve specific problems in such a manner that the final result is efficiently planned, solidly constructed, aesthetically satisfying, in harmony with its surroundings, and suited to its social purpose. All other courses leading to the Bachelor of Architecture degree are expected to contribute to these objectives. The work load is heavy, and the expectations of the faculty are high. It is not uncommon for a student who is encountering serious difficulties to be told to take off a term or a year in order to gain work experience and a fresh perspective on his chosen profession.

Other sequences include four terms of structural principles and systems, four terms of building technology (techniques, equipment, and procedures), four terms of visual communication, and four terms of history of architecture. In history, an introductory survey of two terms is followed by a series of

advanced courses providing an intensive experience in significant episodes. For advanced students, seminars and special research courses in these areas are offered in the Fields of Architecture and Regional Planning.

As a matter of conscious and fundamental policy, each student comes under the instruction of a number of teachers in design during his course of studies. He is exposed to many points of view by experienced teachers and distinguished practitioners and is encouraged to develop his own philosophy of architectural expression.

Although for purposes of organization it is convenient to divide the curriculum into courses, the faculty is aware that a division of architecture into somewhat arbitrary components such as architectural design, architectural history, and architectural science is a matter of convenience only. In actual instruction, effort is made to integrate the subject matter in these separate courses in such a way that they mesh with each other.

In addition to the regular faculty, students are brought into contact with a number of outstanding visitors who expose them to cross-currents in the area of their concern. Visiting critics and lecturers during 1969-70 included Esher Berkosz of Istanbul; Arthur Bernhardt of Massachusetts; Alvin Boyarsky of Illinois; Ornette Coleman of New York; G. Jullian de la Fuente of Paris, France; Harold Horowitz of Maryland; Archie Mackenzie of New York; Franz Oswald of Switzerland; Roderick Robbie of Toronto; John Slayter of Indiana; and Peter Smith of Sydney, Australia.

During his fifth year, the student has the opportunity to work on a special project of his own choice with any faculty member in the department as his adviser. He also may choose with the consent of his project adviser a professor from another department or college as his second adviser.

BACHELOR OF ARCHITECTURE CURRICULUM

First Year

FALL TERM	CREDIT HOURS
Introductory Design 101.....	6
History of Architecture 400*.....	3
Visual Communication 511.....	3
Elective (out of College).....	3
Elective (in or out of College).....	3
	<hr/>
	TOTAL 18

SPRING TERM

Introductory Design 102.....	6
History of Architecture 401*.....	3
Visual Communication 512.....	3
Elective (out of College).....	3
Elective (in or out of College).....	3
	<hr/>
	TOTAL 18

* In addition to History of Architecture 400-401, two subsequent three- or four-hour courses in history of architecture are required for graduation; these two courses may be taken at any time during the last four years from among the in-College electives.

Second Year

FALL TERM	CREDIT HOURS
Intermediate Design 103.....	6
Structural Principles 201.....	3
Technology 601.....	3
Visual Communication 513.....	3
Elective (out of College).....	3
	<hr/>
	TOTAL 18

SPRING TERM

Intermediate Design 104.....	6
Structural Principles 202.....	3
Technology 602.....	3
Visual Communication 514.....	3
Elective (in or out of College).....	3
	<hr/>
	TOTAL 18

Third Year

FALL TERM	
Junior Design 105.....	6
Structural Systems 203.....	3
Technology 603.....	3
Elective (Planning).....	3
Elective (out of College).....	3
	<hr/>
	TOTAL 18

SPRING TERM

Junior Design 106.....	6
Structural Systems 204.....	3
Technology 604.....	3
Elective (out of College).....	3
Elective (in College).....	3
	<hr/>
	TOTAL 18

Fourth Year

FALL TERM	
Senior Design 107.....	6
Electives (out of College).....	6
Electives (in or out of College).....	6
	<hr/>
	TOTAL 18

SPRING TERM

Senior Design 108.....	6
Profession of Architecture 803.....	2
Thesis Program 115.....	1
Electives (out of College).....	6
Elective (in or out of College).....	3
	<hr/>
	TOTAL 18

Fifth Year

FALL TERM	CREDIT HOURS
Advanced Design 109.....	8
Elective (out of College).....	3
Elective (in or out of College).....	3
	<hr/> TOTAL 14
SPRING TERM	
Advanced Design 110.....	8
Electives (in or out of College).....	6
	<hr/> TOTAL 14
	GRAND TOTAL 172

The University requirement in physical education must be met in addition to the courses listed in the curriculum.

Of the thirty required out-of-College elective hours, one course shall be from each of the three following general areas: mathematics, physical or biological sciences; social sciences; and history, English, or other humanities. On approval of the dean's office, special programs of elective work may be arranged to meet the needs of individual students.

Graduate Study

The three programs under which graduate study in architecture may be pursued are urban design, architectural science, and architectural history. Graduate study is also offered in art and in city and regional planning. Every applicant for graduate study is expected to select and identify in advance the program he intends to follow. Detailed admissions requirements for graduate students are given on p. 43.

Urban Design

Students who have satisfactorily completed a five-year course in architecture at an approved institution, or its equivalent, may be admitted as candidates for the degree of Master of Architecture in the professional program of urban design.

Urban design is an integrated approach concerned with the architectural solution to problems posed by city and regional planning. The program of study includes an interpretation of such course material from architecture and planning as will equip the student with an adequate conceptual framework for practice; and it is particularly concerned with the three-dimensional definition of the urban environment in terms which give significance to the individual and his society.

The program of study, cooperatively worked out between the faculties of the Departments of Architecture and City and Regional Planning, permits a degree of special treatment for the individual student. Normally, four semesters of study are required, and the student should not anticipate completing

his studies in less than this time, though in certain special circumstances the requirements for a degree may be completed within a three-semester period. It is possible in individual cases, by specific arrangement in advance, to complete the requirements for both the Master of Architecture and Master of Regional Planning degrees in three years.

Architectural Science

Qualified students enrolled by the Graduate School of the University in programs leading to the degree of Master of Science may elect architectural science as either a major or minor subject, and those enrolled in programs leading to the degree of Doctor of Philosophy may elect it as a minor subject. Programs of study will be arranged to meet the needs of the individual student.

The objectives of the graduate program in Architectural Science are:

1. to afford an opportunity for students of architecture to expand their creative design potential by increasing their knowledge and understanding of the technologies in the building process;

2. to provide a framework within which students graduating in related technical disciplines—civil, electrical, or mechanical engineering, for example—can explore building science and technology related specifically to architecture. For students with such backgrounds, this type of training would prepare them for joining the ranks of consultants to the architectural profession who are well versed in the architectural implications of contemporary science. It would not prepare them to become professional architects.

Students with undergraduate degrees in architecture, architectural engineering, or the various branches of engineering are likely candidates for this program. The program as it is organized is extremely flexible and can be arranged to meet the specific needs and desires of the individual student and to build on his prior technical preparation and competence. For those students who are applying with a straight engineering background, exposure to architectural disciplines would be included in the program of study.

This graduate program in architectural science, started in the fall of 1967, is an outgrowth of an existing program in architectural structures, which began at Cornell in 1962. Its development has been an attempt to broaden the scientific base of architectural education at the graduate level of specialization. The program includes work in environmental systems control, architectural structures, design synthesis of behavioral science, building economics and production, and computer applications in architecture.

Candidates for the Master of Science degree with a major in architectural science must satisfy the following requirements: (a) completion of the program of study prescribed by the student's Special Committee; (b) a minimum of two terms of residence; (c) presentation of a satisfactory thesis; and (d) passing of a final comprehensive examination.

Ordinarily, more than two terms of residence will be required to complete the program of study, depending on the student's background and experience related to his needs and interests. A portion of the student's program will consist of formal course work. Courses offered by the College of Architecture,

Art, and Planning are shown in this *Announcement*. In addition, a student may select courses offered elsewhere in the University, such as structural engineering, environmental systems engineering, engineering mechanics, mechanical engineering, electrical engineering, physics, computer science, mathematics, and design and environmental analysis.

Facilities include a well-equipped structural model laboratory and immediate access to the Cornell computing facilities (IBM 360).

Architectural History

Qualified students enrolled by the Graduate School of the University in programs leading to the degree of Master of Arts or Doctor of Philosophy may elect architectural history as either a major or minor subject. Graduate work in architectural history is administered by the Field of History of Architecture and Urban Development in the humanities division of the Graduate School. It is normally undertaken by students whose undergraduate curricula emphasized architecture, history of art, or related studies.

The graduate program in architectural history is concerned with methods of scholarship and research as well as the development of architecture from the earliest times to the present day. A special feature of the program is the opportunity for the student to prepare for the teaching of the history of architecture in the context of the professional schools of architecture. It is administered jointly with the graduate program in history of urban development, and preservation planning is offered as a minor subject. Work consists of seminars and courses in this and other departments in combination with independent study under individual direction.

To complete the requirements for the degree of Master of Arts in architectural history, candidates must satisfy the requirement for a reading knowledge of one approved foreign language, pass examinations in their major and minor subjects, and submit a satisfactory thesis. The Fine Arts Library provides a focus and resources for study and preparation of the thesis.

Candidates for the doctoral degree must demonstrate a reading knowledge of two approved foreign languages, pass an admission to candidacy examination, and complete a satisfactory dissertation.

Courses of Instruction

The time and place of each course of study and the name of the instructor will be given in a separate memorandum issued by the College office prior to preregistration for each term. In general, an elective course is not offered to fewer than five students.

Architectural Design

Courses in architectural design aim to provide an understanding of the art of architecture, and training in the various skills required of the practitioner. The problem method is used; and instruction is by lectures, group discussion, and individual criticism of the student's work over the drafting board.

The full sequence of courses dealing with architectural design—Architecture 101 through Architecture 110—are required for the degree of Bachelor of Architecture.

Students who have received a passing grade, but one below the C which is prerequisite for advancement to the next sequence course, may be given permission by the Design staff to register in Probationary Design 123 (nonsequence course) and be assigned to work with a class of appropriate level. The student's record, while so registered, will be used by the Design staff to determine his status in subsequent terms.

Faculty: Mr. Ungers, Department chairman; Messrs. Canfield, Chimacoff, Dennis, Herdeg, Heyde, Kira (on leave), Koetter, Mackenzie, Pearman, Rowe, Seligmann, Shaw, Sherwood, Wells, and visiting critics.

Sequence Courses

Architecture 101–102 Introductory Design. Throughout the year. Credit six hours a term.

Architecture 103–104 Intermediate Design. Throughout the year. Credit six hours a term.

Architecture 105–106 Junior Design. Throughout the year. Credit six hours a term.

Architecture 107–108 Senior Design. Throughout the year. Credit six hours a term.

Architecture 109–110 Advanced Design. Throughout the year. Credit eight hours a term. Thesis/Project.

Nonsequence Courses

Architecture 115 Thesis Program. Either term. Credit one hour. Prerequisite: Design 107.

Selection of thesis topic. Work with adviser in preparation of program and acquisition of necessary maps, data, etc.

Architecture 119 Elective Design. Either term. Credit as assigned. May be repeated for credit.

Open by permission to students who wish to take additional work in design or transfers who have not been assigned to a sequence course. The student will be assigned to work with a class of appropriate level.

Architecture 123 Probationary Design. Either term. Credit as assigned. May be repeated if approved by design staff. May not be taken consecutively more than twice.

Note: Courses in Architecture 119 and 123 may not be used to fulfill degree requirements in Architectural Design except by approval of the design staff.

Architecture 511–512 Freshman Visual Communication. Throughout the year. Credit three hours a term.

Fundamental problems of pictorial representation related to design process.

Architecture 513–514 Sophomore Visual Communication. Throughout the year. Credit three hours a term.

Fundamental problems in transforming environmental information from statistical to graphic form.

Architecture 520 Data Transformation and Graphic Representation. Fall term. Credit three hours. Permission of the instructor required. Enrollment limited to third-year students and above. Mr. T. Heyde.

Problems of transforming information in graphic form. Display methods for data presentation and communication with emphasis on graphic techniques. Organization of data and simple statistical methods for data transformation.

Courses for Graduates

Architecture 190–191 Problems in Urban Design. Throughout the year. Credit as assigned.

The basic first-year design course for graduate students in urban design.

Architecture 192–193 Problems in Urban Design. Throughout the year. Credit as assigned.

Continuation of Architecture 190–191.

Architectural Science

The courses in architectural science emphasize the mathematical, structural, and technological principles and systems necessary for the practice of architecture.

The elective courses are intended for qualified students who wish to study more advanced areas of structural theory and design.

Faculty: Mr. Greenberg, head; Messrs. L. D. Brown, Canfield, Crump, Saul, Simons, Trieschmann.

Architecture 200 Structural Concepts. Spring term. Credit three hours. Elective. Open to any student in architecture with at least one semester of architectural design as background.

A nonmathematical discussion of structural concepts and decisions as they influence and are influenced by the architectural design process.

Architecture 201-202 Structural Principles. Throughout the year. Credit three hours a term. Architecture 201 is prerequisite for 202. Four evening preliminary examinations each term, to be scheduled at the beginning of each term.

Fundamental concepts, based on static equilibrium and the strength and deformation of material, that are necessary to an understanding of structural behavior.

Fall term. Statics: reactions and simple stresses, shear and bending moment, tensile cables, and ideal compression arches. Unit stress and strain relationships. Unit stress distribution: centroid, static moment, and moment of inertia.

Spring term. Elastic flexure (timber and steel members): shear and bending unit stress, slope and deflection, continuous beams, combined direct stress and bending. Strength of axial compression members.

Architecture 203 Structural Systems. Fall term. Credit three hours. Prerequisite: Architecture 201-202.

Structural design concepts and procedures for timber and steel building construction.

Architecture 204 Structural Systems. Spring term. Credit three hours. Prerequisite: Architecture 201-202.

Structural design concepts and procedures for reinforced concrete building construction.

Architecture 221 Advanced Steel Building Design. Fall term. Credit three hours. Elective. Prerequisite: Architecture 203 and permission of the instructor. Mr. Saul.

Design and investigation of advanced systems of steel building structure, plastic design of continuous beams and rigid frames, com-

posite steel beam and concrete slab construction, steel space forms.

Architecture 222 Reinforced Concrete Building Systems. Fall term. Credit three hours. Elective. Prerequisite: Architecture 204 and permission of the instructor.

Review of methods and specifications for the design and construction of reinforced concrete building systems. Two-way framing systems. Precast concrete construction. Discussion of ultimate strength and yield line theories. Quality control of reinforced concrete. Exploration of new techniques in concrete construction. Selected topics.

Architecture 223 Building Substructure. Spring term. Credit three hours. Prerequisite: Architecture 204 and permission of the instructor. Mr. Saul.

The principles of soil mechanics and sub-surface exploration. Design of building foundations: footings, piles, subgrade walls.

Architecture 224 Prestressed Building Structures. Spring term. Credit three hours. Elective. Prerequisite: Architecture 204 and permission of the instructor. Mr. L. D. Brown.

The application of prestress as a fundamental strategy. Design of prestressed building elements.

[Architecture 233 Surface Structures. Spring term. Credit three hours. Elective. Permission of the instructor required. Mr. Greenberg. Not offered in Spring, 1971.

The qualitative and quantitative analysis and design of thin shell architectural structures including shells of revolution, cylindrical shells, hypars, and folded plates. Suspension structures. The architectural implications and problems of curvilinear forms. Construction techniques.]

Architecture 240 Special Problems in Architectural Science. Either term. Registration and credit by arrangement. Elective. Staff.

Architecture 250 Ultimate Strength Theory. Fall term. Credit three hours. Elective. Prerequisite: Architecture 204 and permission of the instructor. Mr. L. D. Brown.

A survey of flexural theory beyond the elastic range and the principles of limit design relationships applied to continuous steel and reinforced concrete construction.

Architecture 260 Computer Applications in Architecture. Fall term. Credit three hours. Elective. Enrollment limited to third-year students and above. Mr. Greenberg.

Designed to acquaint the student with the current uses and potentials of electronic computers in the architectural profession. No

prior knowledge of computers is assumed. Topics will include: basic principles and logic of computing systems, computer programming (CUPL and FORTRAN), architectural planning models, examples of linear programming problems, computer graphics, and data processing.

Architecture 270 Industrialized Building. Fall term. Credit three hours. Prerequisite: permission of the instructor.

Concepts of industrialized building and organizational patterns of the building process; productivity and standardization. Architectural implications of methods of production and assembly, subsystem coordination, interface and tolerances. The quality concept, performance specification and system evaluation.

Architecture 271 Seminar in Industrialized Building. Spring term. Credit three hours. Prerequisite: Architecture 270 and permission of the instructor. Staff.

In-depth study of a particular topic related to those dealt with in Architecture 270.

Architecture 280 Architectural Science Laboratory. Either term. Credit four to six hours. Open to graduate students only. Staff.

Projects, exercises, and research in the architectural sciences.

Architecture 290 Thesis or Research in Architectural Science. Either term. Credit as arranged. Graduate students only. Staff.

Architecture 601-602 Architectural Technology. Throughout the year. Credit three hours. Prerequisite: two terms in Architecture or permission of the instructor.

A review of the common materials and methods of construction.

Architecture 603-604 Architectural Technology. Throughout the year. Credit three hours.

A review of the problems of heat, light, sound, and sanitation with respect to architectural construction.

Architecture 611 Graphic Techniques in Contract Communication. Fall term. Credit three hours. Elective. Prerequisite: Architecture 604, two terms in Architecture or permission of the instructor. Mr. Canfield.

An investigation of the problems of graphic communication between the designer and the constructor of architectural projects. The concern will be with familiar as well as special means, with emphasis upon the manner in which they affect efficiency in the production of graphic documents, accuracy and ease in bidding, and the usefulness of these documents to the constructor in the execution of the project.

Architecture 623 Architectural Illumination. Fall term. Credit three hours. Elective. Prerequisite: Architecture 604 and permission of the instructor. Mr. Simons.

An extension of the study of illumination begun in Architecture 604. A detailed examination of the requirements of light with respect to tasks as well as architectural form. Familiarization, selection, and design of systems.

Architecture 631 Radiation Shelter Design. Spring term. Credit three hours. Elective. Prerequisite: Architecture 602, Architecture 204 or concurrent registration, and permission of the instructor. Mr. Saul.

The effects of nuclear explosions. Principles of radiation shielding. Environmental shelter factors. Design criteria. Design and analysis problems.

Upon satisfactorily completing the course and passing the required examination, participants can become qualified as fallout shelter analysts, contingent also upon their receiving their degrees.

Architecture 640 Environmental Control Systems. Fall term. Credit three hours. Prerequisite: Architecture 603 and 604. Mr. Crump.

A study of the influences of environment on the design of buildings and urban developments. Lectures and problems involving the relation and integration of environmental phenomena and psychophysical factors in the design of control systems.

Architecture 650-651 Behavioral Science in Design. Throughout the year. Credit three hours a term. Enrollment for undergraduate and graduate architecture students and out-of-college students. Permission of the instructor required. Mr. Trieschmann.

Theoretical and methodological aspects of behavioral science which relate to physical design. Development of techniques for gaining behavioral awareness on an empirical level. The students will consider creatively various methods of behavioral data collection using direct observation, photography, pattern recognition, and combinations of these.

Architectural History

Courses in the history of architecture emphasize the relation between developments in architecture and their historical, physical, ideological, artistic, and social context. For advanced students, seminars and special research courses afford an opportunity to investigate historical problems in architecture.

Faculty: Mr. Jacobs, head; Messrs. Hugo Brunt, Otto, Rowe, and assistants.

Architecture 400-401 Survey of Western Architecture. Throughout the year. Credit three hours a term. Messrs. Jacobs and Otto.

The history of architecture, considered as a social and cultural expression of Western civilization. Ancient and medieval architecture are discussed in the fall; Renaissance and modern architecture in the spring. Intended for students in other colleges interested in an introduction to the history of architecture, and required of all architecture students. No special skills or knowledge are necessary. Nonarchitects may take either or both terms for credit. Slide lectures, readings, short papers, and examinations.

[Architecture 430 The Ancient Near East. Credit four hours. Prerequisite: Architecture 400 or permission of the instructor. Not offered in 1970-71.

Architecture of the oldest historic civilizations associated with Western tradition, with emphasis on Egypt and Mesopotamia.]

[Architecture 431 The Classical World. Spring term. Credit four hours. Prerequisite: Architecture 400 or permission of the instructor. Not offered in 1970-71.

Architecture of the ancient Mediterranean civilizations, with emphasis on Greece and Rome.]

Architecture 432 The Early Middle Ages (History of Art 333*). Spring term. Credit four hours. Prerequisite: permission of the instructor. Mr. Calkins.

An examination of the sculpture, painting, and architecture from A.D. 300 to A.D. 1050. Lectures and discussion periods. Students will prepare a substantial term paper.

Architecture 433 The Middle Ages (History of Art 334*). Fall term. Credit four hours. Prerequisite: permission of the instructor. Mr. Calkins.

A survey of the trends in architecture in Western Europe from the late antique period through the late Gothic, with emphasis on the Romanesque.

[Architecture 434 Islamic Architecture. Spring term. Credit four hours. Prerequisite: permission of the instructor. Not offered in 1970-71.]

[Architecture 435 Architecture and Planning in the Orient (Planning 704). Fall term. Credit three hours. Prerequisite: permission of the instructor. Mr. Hugo-Brunt. Not offered in 1970-71.

An introduction to the evolution of architecture and urbanization in India, China, Thailand, Cambodia, and Japan.]

Architecture 436 The Renaissance. Spring term. Credit four hours. Prerequisite: permission of the instructor. Messrs. Otto and Rowe.

Italian architecture of the fifteenth and sixteenth centuries.

Architecture 437 The Baroque. Fall term. Credit four hours. Prerequisite: Architecture 400 or permission of the instructor. Mr. Otto. European architecture of the seventeenth and eighteenth centuries.

Architecture 438 American Architecture. Spring term. Credit four hours. Prerequisite: permission of the instructor. Mr. Jacobs.

Building in the United States from colonial times, with emphasis on the nineteenth and twentieth centuries.

[Architecture 439 Modern European Architecture (History of Art 367*). Fall term. Credit four hours. Prerequisite: permission of the instructor. Mr. T. M. Brown. Not offered in 1970-71.

A survey of nineteenth- and twentieth-century architecture in Europe.]

Architecture 448-449 Historical Lectures in Architecture. Throughout the year. Credit one or two hours a term. Permission of the instructor required. Staff.

A series of one or two lectures per week on topics related to architectural history.

Architecture 450-451 Historical Seminars in Architecture. Throughout the year. Credit two hours a term. Permission of the instructor is required. Staff.

Students will prepare papers discussing problems relating to design or architecture, using historical evidence as the basis.

Architecture 455 Special Investigations in the History of Architecture. Either term. Credit as assigned. Permission of the instructor required. Staff.

Architecture 460 Introduction to Architectural Aspects of Archaeological Field Work. Either term. Credit two hours. Mr. Jacobs.

For architects, archaeologists, and laymen. An investigation of architectural techniques used in archaeology.

Architecture 461 Methods of Archival Research (Planning 601). Spring term. Credit three hours. Mr. Parsons.

Examination of methods of using archival materials for research in the history of architecture and urban development, using manuscripts, drawings, correspondence, and documents in the Cornell University archives and regional history collections.

Architecture 465 Design and Conservation (Planning 644). Fall term. Credit two hours. Messrs. Jacobs and Jones.

The rationale for and methods of utilizing existing cultural and aesthetic resources in the planning and design of regions and cities.

* Taken in the College of Arts and Sciences.

Architecture 466 Documentation for Preservation Planning (Planning 645). Spring term. Credit two hours. Mr. Jacobs, staff, and visiting lecturers.

Methods of collecting, recording, processing, and analyzing architectural and cultural survey materials.

Architecture 468-469 Informal Study in the History of Architecture. Throughout the year. Credit as assigned. Permission of the instructor required. For graduate students.

Architecture 473 Seminar in Medieval Art and Architecture (History of Art 531*). Fall term. Credit four hours. Prerequisite: History of Art 341 or permission of the instructor. Mr. Calkins.

Problems in medieval art and architecture.

Architecture 477 Seminar in Baroque Architecture. Spring term. Credit four hours. Prerequisite: Architecture 437 or permission of the instructor. Mr. Otto.

Historical problems in European architecture of the seventeenth and eighteenth centuries.

Architecture 478 Seminar in the History of American Architecture. Fall term. Credit four hours. Prerequisite: permission of the instructor. Mr. Jacobs.

Investigation by means of reading, lectures, and reports of historical problems in architecture of the nineteenth and twentieth centuries in the United States.

Architecture 479 Seminar in the History of Modern Architecture (History of Art 565*). Spring term. Credit four hours. Prerequisite: permission of the instructor. Mr. T. M. Brown.

Problems in modern art and architecture.

* Taken in the College of Arts and Sciences.

Architecture 489 Problems in Modern Architecture. Spring term. Credit two hours. Prerequisite: consent of the instructor. Mr. Rowe.

Architecture 490 Thesis in Architectural History. Either term. Credit as assigned.

Independent study for the Master's degree.

Architecture 499 Dissertation in Architectural History. Either term. Credit as assigned.

Independent research by candidates for the Ph.D. degree.

Architectural Analysis

Architecture 423-424 Theory of Architecture. Throughout the year. Credit three hours a term. First term not prerequisite to the second. Mr. Seligmann.

Architecture 426 Seminar: Twentieth Century Housing: A Comparative Analysis. Spring term. Credit two hours. Prerequisite: Architecture 106. Open only to undergraduate students in architecture. Mr. Sherwood.

The comparative analysis of particular housing types and projects will be the area of major concern.

The Profession of Architecture

Architecture 803 The Practice of Architecture. Spring term. Credit two hours. Mr. Crump.

A seminar for fourth-year students devoted to discussion of the organization of the profession of architecture, professional ethics, client relations, and the position of the architect within society. A summary of all the diverse aspects represented within the actual practice of architecture.

Art

Undergraduate Program

Bachelor of Fine Arts Degree

The curriculum leading to the degree of Bachelor of Fine Arts provides an opportunity for the student to combine a general liberal education with the studio concentration required for a professional degree. During the first year, all students follow a common course of study designed to provide a broad introduction to the arts and to provide a basis for the intensive studio experience in painting, sculpture, and the graphic arts afforded in the last three years. In the third semester, students take either painting or sculpture, and a required course in printmaking. Beginning with the fourth term, students concentrate on painting, sculpture, or printmaking. They may elect additional studio work in any of these subjects during the last two years, with the consent of the instructor, providing the courses are taken in sequence and at the hours scheduled. These courses are designed to promote a knowledge and critical understanding of these arts, as well as to develop the individual student's talent. All members of the faculty in the Department of Art are active practicing artists whose work represents a broad range of expression.

Studio courses occupy approximately one-half of the student's time during his four years at Cornell; the remainder is devoted to a diversified program of academic subjects, with a generous provision for electives.

The curriculum in art is an independent program of studies within the College of Architecture, Art, and Planning. The intimate relationship thus established between training in fine arts and training in architecture and city planning is a source of special strength in the Cornell program and affords unusual benefits to the students in these three disciplines.

Although the undergraduate curriculum in art is an excellent background for a career in applied art and offers courses in the use of graphics in modern communications, no specific technical courses are offered in such areas as interior design, fashion, or commercial art.

Those students who are primarily interested in the history rather than in the practice of art should apply for admission to the College of Arts and Sciences with the objective of doing major work in the Department of the History of Art in that College. They may, if they wish, take studio courses as electives in the Department of Art in the College of Architecture, Art, and Planning.

BACHELOR OF FINE ARTS CURRICULUM

First Year

FALL TERM	<i>Painting</i>	<i>Sculpture</i>	<i>Graphics</i>
Color, Form, and Space, Art 309.....	2.....	2.....	2.....
Introductory Painting, Art 301.....	3.....	3.....
Introductory Sculpture, Art 331.....	3.....	3.....
Introductory Drawing, Art 341.....	2.....	2.....
Electives (out of Department).....	6.....	6.....	6.....

SPRING TERM

	<i>Painting</i>	<i>Sculpture</i>	<i>Graphics</i>
Color, Form, and Space, Art 310.....	2	2	2
Introductory Painting, Art 302.....	3	3	3
Introductory Sculpture, Art 332.....	3	3	3
Introductory Drawing, Art 342.....	2	2	2
Electives (out of Department).....	6	6	6

TOTAL 16

Second Year

FALL TERM

Second-Year Painting, Methods and Materials of Painting, Art 303.....	3		3
Second-Year Sculpture, Art 333.....		3	
Second-Year Drawing, Art 343.....	2	2	2
Printmaking, Art 321 or 322 (spring or fall).....	3	3	3
Elective* (out of Department).....	7	7	7

TOTAL 15

SPRING TERM

Second-Year Painting, Methods and Materials of Painting, Art 304.....	3		
Second-Year Sculpture, Art 334.....		3	
Printmaking, Art 322 or 321 (spring or fall).....			3
Second-Year Drawing, Art 344.....	2	2	2
Electives* (out of Department and/or Printmaking 322†).....	10	10	10

TOTAL 15

Third Year

FALL TERM

Third-Year Painting, Art 305.....	5		
Third-Year Sculpture, Art 335.....		5	
Advanced Printmaking, Art 323.....			5
Electives*.....	12	12	12

TOTAL 17

SPRING TERM

Third-Year Painting, Art 306.....	5		
Third-Year Sculpture, Art 336.....		5	
Advanced Printmaking, Art 324.....			5
Electives*.....	12	12	12

TOTAL 17

Fourth Year

FALL TERM

Fourth-Year Painting, Art 307.....	5		
Fourth-Year Sculpture, Art 337.....		5	
Fourth-Year Printmaking, Art 325.....			5
Electives*.....	12	12	12

TOTAL 17

† With permission of the instructor.

*One course must be in art history, taken in the College of Arts and Sciences.

SPRING TERM

Painting Sculpture Graphics

Senior Thesis in Painting, Art 308.....	5		
Senior Thesis in Sculpture, Art 338.....		5	
Senior Thesis in Graphics, Art 326.....			5
Electives	12	12	12

TOTAL 17

GRAND TOTAL 130

The University requirement of four terms in physical education must be met in addition to the courses listed.

Of the total required hours of electives eighteen shall be in art history, and four courses shall be in history, English, or other humanities offered in the College of Arts and Sciences.

A candidate for the Bachelor of Fine Arts degree at Cornell is required to spend the last two terms of his candidacy in residence at this University subject to the conditions of the Cornell Faculty Legislation of November 14, 1962.

Graduate Study

Master of Fine Arts Degree

Students who hold Bachelor's degrees and have clearly demonstrated professional promise in the field of art may be admitted as candidates for the degree of Master of Fine Arts, majoring in painting, sculpture, or graphic arts.

The course of study leading to this degree requires four terms of residence and is intended for those who wish to complete their education as artists. A high proportion of those who receive the degree enter the field of teaching at the college level.

The curriculum leading to the Master's degree is flexible to accommodate the needs of the individual student. The normal requirement of each of the first three terms is fifteen credit hours; of this, from seven to ten credit hours will be assigned to studio work, two credit hours to Art 398 (Seminar in Art Criticism) and the remainder to courses outside the Department of Art. Students are required to take at least twelve hours of academic work outside the Department of Art during their four terms in residence.

Graduate students in art are eligible for introductory or advanced courses in any field of study offered at the University; courses in writing, stagecraft, cinema, and music are available, as well as those in the usual academic subjects of the history of art, philosophy, anthropology, etc. Candidates for the Master's degree must complete fifteen credit hours of courses in the history of art taken either as graduate or undergraduate students.

At the end of the third term of residence, the candidate is required to present a one-man exhibition of work done while in residence. The principal effort of the fourth term is a thesis consisting of creative work and, in addition, an essay dealing with a subject in the theory or history of the visual arts. A verbal examination on these subjects in general occurs on presentation of the thesis.

Since the course of study is intended for those who in the opinion of the faculty are competent to do independent work in the field of their choice, all applicants must submit photographs of their work. Color slides are preferable for painting. The original works of art should not be sent.

It is not practical to admit candidates to the program at the beginning of the spring term as all available studio facilities, scholarships, and assistantships will have been allocated at the beginning of the school year. Assistantships are generally awarded to second-year students only. Transfer credit for work done elsewhere, or in summer, is not acceptable.

Courses of Instruction

The time and place of each course of study and the name of the instructor will be given in a separate memorandum issued by the College office prior to preregistration for each term. Most courses given in the Department of Art are open to students in any college of the University who have fulfilled the prerequisites and who have the consent of the instructor. In general, an elective course is not offered to fewer than five students.

Faculty (Art courses): Mr. Seley, Department chairman; Messrs. Bosson, Colby, Daly, Dzubas, Evett, Mahoney, Miss Pederson-Krag, Messrs. Poklen, Poleskie, Singer, Squier, von Schlegell; visiting critics, and assistants.

Courses in Theory and Criticism

Art 309-310 Color, Form, and Space. Throughout the year. Credit two hours a term. For art majors.

A study of traditional and contemporary ways of drawing and painting. An analysis of color theory and pictorial space.

Art 398 Seminar in Art Criticism. Either term. Credit two hours a term first year. Credit four hours for third term, when theme is written. May be repeated for credit. Three terms required of Master of Fine Arts candidates. Open to graduate students.

A study of critical opinions, historical and modern, and their relation to problems in the theory of art.

Studio Courses in Painting

Art 301-302 Introductory Painting. Throughout the year. Credit three hours a term. For art majors only.

An introduction to the problems of artistic expression through the study of pictorial composition; proportioning, spacing, and the designing of shapes as applied to abstract and representational design. Students will draw as well as paint.

Art 303-304 Second-Year Painting—Materials and Methods. Throughout the year.

Credit three hours a term. Prerequisite: Art 302 or, with permission, 300B.

Study of traditional and contemporary media, from fresco to synthetic resins.

Art 305 Third-Year Painting. Fall term. Credit five hours. Prerequisite: Art 304.

Continued study of the principles of painting, the selection and expressive use of materials and media. Group discussions and individual criticism.

Art 306 Third-Year Painting. Spring term. Credit five hours. Prerequisite: Art 305.

Continued study of the principles of painting, the selection and expressive use of materials and media. Group discussions and individual criticism.

Art 307 Fourth-Year Painting. Fall term. Credit five hours. Prerequisite: Art 306.

Further study of the art of painting through both assigned and independent projects executed in various media. Instruction through group discussions and individual criticism.

Art 308 Senior Thesis in Painting. Spring term. Credit five hours. Prerequisite: Art 307.

Advanced painting project to demonstrate creative ability and technical proficiency.

Art 390 Graduate Painting. Either term. Credit as assigned. May be repeated for credit. For Master of Fine Arts students in painting.

The student will be responsible, under direction, for planning his own projects and selecting the media in which he is to work. All members of the staff are available for individual consultation, and weekly discussion sessions of works in progress are held.

Studio Courses in Graphic Arts

Art 321 Relief and Intaglio Printmaking. Either term. Credit three hours. Prerequisite: Art 302 or permission of instructor.

Study and practice of the methods of block printing, etching, engraving, and other methods of relief and below-surface printing. Art 321 or Art 322 may be taken to satisfy the graphics requirement for art majors.

Art 322 Lithography, Silkscreen, Mixed Techniques in Printmaking. Either term. Credit three hours. Prerequisite: Art 302 or permission of instructor.

Study and practice of lithographic and silkscreen printing, and various methods of imprint combined. May be taken to satisfy graphics requirements for art majors.

Art 323 Advanced Printmaking. Fall term. Credit five hours. Prerequisite: Art 321 or 322.

Advanced and independent study of graphic art, together with typographic solutions. The relation of graphic art to the production of publications, books, magazines, etc., may be explored.

Art 324 Advanced Printmaking. Spring term. Prerequisite: Art 323.

Continuation and expansion of Art 323.

Art 325 Senior Printmaking. Fall term. Credit five hours. Prerequisite: Art 324.

Further study of the art of graphics through both assigned and independent projects executed in various media. Instruction through group discussions and individual criticism.

Art 326 Senior Thesis in Printmaking. Spring term. Credit five hours. Prerequisite: Art 325.

Advanced printmaking project to demonstrate creative ability and technical proficiency.

Art 392 Graduate Printmaking. Either term. Credit as assigned. May be repeated for credit. For Master of Fine Arts students in graphic arts. Permission of instructor required.

The student will be responsible, under direction, for planning his own projects and selecting the media in which he is to work. All members of the staff are available for individual consultation; discussion sessions of work in progress are held.

Studio Courses in Sculpture

Art 331-332 Introductory Sculpture. Throughout the year. Credit three hours a term. For art majors only.

A series of studio problems introducing the student to the basic considerations of artistic expression through three-dimensional design. Modeling in plastiline, building directly in plaster, and casting in plaster.

Art 333-334 Second-Year Sculpture. Throughout the year. Credit three hours a term. Prerequisite: Art 332.

The study of more complex problems in design and the interrelation for expressive purposes of design and the materials of sculpture, wood, stone, metals, and some plastic materials.

Art 335 Third-Year Sculpture. Fall term. Credit five hours. Prerequisite: Art 334.

Continued study of the principles of sculpture, the selection and expressive use of materials and media. Group discussions and individual criticism.

Art 336 Third-Year Sculpture. Spring term. Credit five hours. Prerequisite: Art 335.

Continuation and expansion of Art 335.

Art 337 Fourth-Year Sculpture. Fall term. Credit five hours. Prerequisite: Art 336.

Further study of the art of sculpture through both assigned and independent projects executed in various media. Instruction through group discussions and individual criticism.

Art 338 Senior Thesis in Sculpture. Spring term. Credit five hours. Prerequisite: Art 337.

Advanced sculpture project to demonstrate creative ability and technical proficiency.

Art 393 Graduate Sculpture. Either term. Credit as assigned. May be repeated for credit. For Master of Fine Arts students in sculpture.

The student will be responsible, under direction, for planning his own projects and selecting the media in which he is to work. All members of the staff are available for individual consultation, and weekly discussion sessions of works in progress are held.

Studio Courses in Drawing

Art 341-342 First-Year Drawing. Throughout the year. Credit two hours a term. For art majors only.

A basic drawing course in the study of the human figure. Studio work provides experiments in visual concentration (memory drawings) and coordination of hand and eye (contour drawings) as well as the opportunity, in long poses, to combine line and tone in

drawings where the relation between anatomical and artistic proportion is studied and design elements are stressed. Contemporary and historical examples of figure drawing are analyzed in discussions.

Art 343-344 Second-Year Drawing. Throughout the year. Credit two hours a term. Prerequisite: Art 342.

A continuation of the basic studies undertaken in Art 342, but with a closer analysis of the structure of the figure and a wider exploitation of its purely pictorial qualities. Students may paint as well as draw.

Graduate Thesis

Art 396 Graduate Thesis. Spring term. Credit as assigned.

For graduate students in their last term in the programs in painting, sculpture, and graphics.

Studio Courses in Painting, Drawing, and Sculpture for Out-of-Department Students

Registration limited. Students must register in the Office of the Department of Art, 109 Franklin, to be accepted.

Art 300A Introductory Painting and Drawing. Either term. Credit two or three hours. No prerequisites.

For students not majoring in art who want an introduction to the basic principles of drawing and painting. Offers the student an opportunity to test and develop his skill and to broaden his understanding of these arts. Studio work with occasional lectures and discussions. No previous experience required.

Art 300B Introductory Painting and Drawing. Either term. Credit two or three hours. Prerequisite: Art 300A.

A continuation of Art 300A.

Art 300C Introductory Painting and Drawing. Either term. Credit two or three hours. Prerequisite: Art 300B.

A continuation of Art 300B.

Art 320A Introductory Printmaking. Fall term. Credit three hours. No prerequisites.

For students not majoring in art who want to explore the creative potential of the vari-

ous printmaking techniques. Emphasis will be on the silk-screen and relief print. Studio work with occasional lectures and demonstrations.

Art 320B Introductory Printmaking. Spring term. Credit three hours. No prerequisites.

A continuation of 320A with emphasis on the intaglio and lithographic processes.

Art 320C Introductory Printmaking. Fall term. Credit three hours. Prerequisite: Art 320B.

Emphasis will be on the silk-screen and relief print.

Art 320D Introductory Printmaking. Spring term. Credit three hours. Prerequisite: Art 320B.

Emphasis will be on intaglio and lithographic processes.

Art 330A Introductory Sculpture. Either term. Credit three hours. No prerequisites.

For students not majoring in art. Offers an introduction, through studio work with occasional lectures and discussions, to the principles of sculpture. The student will work under individual instruction in plasteline, plaster, wood, or metal. No previous experience required.

Art 330B Introductory Sculpture. Either term. Credit three hours. Prerequisite: Art 330A.

A continuation of Art 330A.

Art 330C Introductory Sculpture. Either term. Credit three hours. Prerequisite: Art 330A and B.

A continuation of Art 330A and B.

Art 345 Life Drawing. Either term. Credit two hours.

Drawing from the model in pencil, ink, and charcoal.

Special Studio Course

Art 381 Special Studio. Either term. Credit as assigned. May be repeated for credit.

For transfer students and others whose standing in the professional sequence is to be determined. May be in painting, sculpture, or graphic arts.

City and Regional Planning

City planning and regional planning seek to guide the development of the environment in order that man's aspirations may be better satisfied. City planning is concerned primarily with the urban environment, the social and economic forces that affect it, and the processes of plan making and administration. Regional planning is concerned primarily with economic and resource regions, the forces that generate economic growth, and the ways in which resources can best be used in area development.

The programs of study in this field are at the graduate level. They have two major objectives: professional education for participation in planning and the administration of plans for the development of urban areas and regions; and more advanced specialized education for those who seek careers in teaching and research as well as professional practice.

Study for the degree of Master of Regional Planning prepares candidates for professional service in city, county, and metropolitan area planning agencies; in state, interstate, and federal planning agencies; in private businesses and other organizations dealing with urban problems; and in private consulting practice. Study for the degree of Doctor of Philosophy offers advanced work for those interested in research and teaching positions in the growing number of graduate and undergraduate planning education programs, or in research positions in governmental agencies, private organizations, or professional practice.

Students in the Department of City and Regional Planning are encouraged to take advantage of the resources in related programs at Cornell. The expanding program of urban research at the University is focused in the Center for Urban Development Research. The Center for Aerial Photographic Studies, the Water Resources and Marine Sciences Center, and the Center for Environmental Quality Management also provide research programs and assistance which enable the Department and individuals to focus their interests in these fields. Graduate programs in public administration in the Graduate School of Business and Public Administration, and in the School of Civil Engineering, the School of Industrial Engineering and Operations Research in the College of Engineering, and the Urban Design Program in the College of Architecture, Art, and Planning offer opportunities for combined programs of study.

In addition to the specialized city and regional planning collection of the Fine Arts Library, the research facilities of the John M. Olin Library, as well as branch libraries such as Albert R. Mann, Business and Public Administration, Engineering, Industrial and Labor Relations, and Law, are available for graduate student use.

Admission Requirements

Beginning graduate students can apply to the Master's program or to the doctoral program as candidates for the Master's degree. Transfer to the doctoral program can be requested at any time after the second semester of

work. Applicants with previous graduate work can apply for advanced standing or direct admission to doctoral study.

Applicants are expected to hold a Bachelor's degree from a recognized institution. It may be an academic or professional degree in any field of study.

All applicants resident in the United States during the year preceding matriculation must submit scores from the Graduate Record Examination Aptitude Tests taken within the previous two years. Applicants are urged to take the tests as early as possible, preferably November, so that results will be available for review.

Master of Regional Planning

Graduate study for the Master's degree is administered by a professional division of the Graduate School and provides the basic professional skills in analysis, methods, and techniques of area planning and administration needed for practice in the field of city and regional planning.

The course of study for the Master of Regional Planning degree normally requires two years. Cornell undergraduates in the School of Civil Engineering, the School of Industrial Engineering and Operations Research, or in the Department of Architecture may, with permission of their advisers and the chairman of the Department of City and Regional Planning, follow a specialized program which may enable them, if admitted as graduate students, to earn the degree of Master of Regional Planning in two or three terms of graduate study.

Students in the first year follow a program of study designed to meet area requirements in the basic elements of planning: history, urban and regional theory, planning theory, analytical methods, and design and practice. The second year provides opportunity to pursue these subjects in greater depth, to study problem areas of application, such as housing and urban renewal, regional and comparative planning, environmental or comprehensive health planning, and social or social facilities planning. Elective courses outside the field may also be taken.

A summer office practice and training program is offered in New York City. It is designed to provide work experience in planning agencies and consulting firms in the metropolitan area, combined with lectures, seminars, and field trips. Graduate credit is given, but participation is not a requirement for the M.R.P. degree.

For further information not found in this *Announcement*, write to the chairman, Department of City and Regional Planning, 106 W. Sibley Hall.

CURRICULUM. A minimum of sixty credit hours of course work is required for the M.R.P. degree. Thirty of these credits must be in courses offered by the department. For the guidance of the student and his adviser, courses which satisfy minimum levels of competence central to professional education are listed below:

Planning theory: Planning 510; Planning 520 or BPA 123 or Operations

Research 9170; Planning 620 or BPA 120 or 502 or ILR 562; BPA 553 or 379 or Planning 523 or Law 102.

Urban and regional theory and history: Planning 412 or 513, or Sociology 433 or 541, or Rural Sociology 443; Planning 700 or 701, or 702, or Economics 523, or History 376, 377, 378.

Physical and aesthetic aspects of the environment: Engineering 2532, or 2626, or 2423, or 2421, or 2622, or Ecology 361 or Conservation 510; and Planning 540, or 642, or 643, or 644.

Quantitative methods: Planning 531, 732, or 733; and Planning 536 or 537. Permission to waive 531 or 536 in order to take the more advanced courses listed above is at the discretion of the instructors in Planning 531 and 536.

Planning practice: Planning 541 and 640.

Candidates for the M.R.P. degree must complete a satisfactory thesis with six to ten credit hours as determined by the student and his thesis committee chairman.

Course choices among the areas are to be approved by the candidate's academic adviser. For listings of possible elective courses outside the Department of City and Regional Planning, applicants and degree candidates should see the appropriate *Announcements* of the Graduate School.

Doctor of Philosophy

Graduate study leading to the degree of Doctor of Philosophy is offered under the jurisdiction of the faculty of the Graduate School. A Master's degree in city or regional planning with course work equivalent to that required in the program at Cornell is ordinarily required for admission to candidacy for the Ph.D. degree with a major in Planning. Applicants who hold the Master's degree in a related field and have had acceptable experience in city or regional planning practice, or have completed substantial graduate-level course work in planning, may be considered for admission. Such candidates may be required to take additional work at the Master's level.

Each candidate for the Ph.D. degree must complete a program of studies approved by his Special Committee, composed of a chairman representing his major subject and other members of the Graduate Faculty representing minor subjects. Those interested in obtaining the Ph.D. degree should consult the *Announcement of the Graduate School: Social Sciences* for additional information on the requirements for the degree.

The course of study requires work in two minor subjects in addition to a major subject in the Field of City and Regional Planning and the preparation of a satisfactory thesis. Minor work is possible in such subjects as administrative engineering, aerial photographic studies, agricultural economics, architectural history, comparative government, econometrics and economic statistics, economic development, economic theory, consumer economics and public policy, environmental analysis and design, law, natural resources, conservation, operations research, the political process, political theory,

public administration, research methodology, sociology, statistics, sanitary engineering, and transportation engineering. In consultation with the chairman of his Special Committee, the Ph.D. candidate will normally select two minor subjects which best complement his research interests in city and regional planning.

Work for the Ph.D. is considered preparatory to making creative contributions to the field. For that reason, substantial competence and knowledge of basic analytical and research methods will be required. Candidates may fulfill this requirement by preparation previous to entrance or by course work at Cornell which may be in a minor subject.

For further information about programs of study, admission, financial aid, and teaching fellowships see p. 43 of this *Announcement*, and write to the chairman, Department of City and Regional Planning, 106 West Sibley Hall.

Courses of Instruction

The time and place of each course of study and the name of the instructor will be given in a separate memorandum issued by the Department's office prior to registration for each term. Most courses in the Department of City and Regional Planning are open to students in any college of the University who have fulfilled the prerequisites and who have the consent of the instructor. In general, an elective course is not offered to fewer than five students.

Faculty: Mr. Parsons, Department chairman; Messrs. Clavel, Czamanski, Feldt, Goldsmith, Hugo-Brunt (on leave), Jones, Kelly, Mackesey, Reps, Riordan, Saltzman, Smith, Stein, Stewart, Swift, Vietorisz, Winston, and visiting lecturers.

Planning History

Planning 601 Methods of Archival Research (Architecture 461). Spring term. Credit three hours. Mr. Parsons.

Examination of methods of using archival materials for research in the history of architecture and urban development, using manuscripts, drawings, correspondence, and documents in the Cornell University archives and regional history collections.

Planning 700 History of Planning I. Fall term. Credit three hours. Prerequisite: permission of the instructor. Mr. Mackesey.

Historical methods and research techniques; case studies and aesthetic evaluation; the urban revolution; classical societies; medieval urbanism; the Renaissance and the baroque in Europe; colonization and North America.

[Planning 701 History of Planning II. Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Hugo-Brunt. Not offered in 1970-71.

Introduction; the social, philanthropic, and planning movements from the eighteenth

century to World War II; Industrial Revolution and technological change; reform; public health, housing, model industrialists; research techniques; planning pioneers and theorists; garden and lineal cities, high-and low-density solutions; new town theories.]

Planning 702 Seminar in the History of American City Planning. Spring term. Credit two hours. Prerequisite: Planning 700 or permission of the instructor. Mr. Reps.

[Planning 704 Architecture and Planning in the Orient (Architecture 435). Fall term. Credit four hours. Prerequisite: Arch. 400, or Planning 700 or 701, or special permission. Mr. Hugo-Brunt. Not offered in 1970-71.

The evolution of architecture and urbanization in India, China, Cambodia, Japan, and Thailand.]

[Planning 705 Introduction to the History of Landscape Architecture and Design. Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Hugo-Brunt. Not offered in 1970-71.

Classical landscape in the Mediterranean and the Middle East; the Islamic Byzantine tradition; medieval cityscape and the agrarian system; the Renaissance; landscape of gardens in Persia, India, China, Thailand, and Japan. The Victorians; landscape in North America; colonial landscape, the twentieth century; horticulture and techniques; landscape in contemporary planning and architecture.]

[Planning 707 The History of Colonial Planning. Fall term. Credit three hours. Prerequisites: Arch. 400, or Planning 700, or History 371, or special permission. Mr. Hugo-Brunt. Not offered in 1970-71.

Colonial city planning and civic design in Africa, America, Asia, and Australasia.]

Planning 709 Informal Study in the History of City Planning. Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

Urban and Regional Theory

Planning 410 Introduction to Urban Planning Theory and Practice. Fall term. Credit three hours. Messrs. Parsons and Smith.

A study of contemporary urban planning practice viewed within the context of the evolution of planning theory and theories of urban development.

Planning 411 Introduction to Urban Planning. Spring term. Credit one hour. May not be taken for credit by those who have taken Planning 410 or 510. Staff.

A concise survey of urban planning for students seeking an introduction to the field.

Planning 412 Introduction to Urban and Regional Theory. Fall term. Credit four hours. Messrs. Goldsmith and Smith.

An eclectic course, borrowing theories from economics, sociology, and geography to explain the existence, functioning, and growth of cities. Discussion of why, how, and where people agglomerate, and an attempt to apply theories to currently perceived urban problems.

Planning 510 Principles of City and Regional Planning. Fall term. Credit three hours. Open to graduate students in planning and other graduates and upperclassmen or permission of the instructor. Mr. Clavel.

A review of the basic influences in the development of cities. A general view of the theory and accepted practice of city and regional planning, including a study of the social, economic, and legal phases.

Planning 512 Introduction to Urban and Regional Theory. Fall term. Credit four hours. Messrs. Goldsmith and Smith.

An eclectic course, borrowing theories from economics, sociology and geography to explain the existence, functioning and growth of cities. Discussion of why, how, and where people agglomerate, and an attempt to apply theories to currently perceived urban problems.

Planning 513 Introduction to Human Ecology. Fall term. Credit three hours. Mr. Feldt.

An examination of the form and development of the human community with respect to spatial, temporal, and functional patterns of organization. Demographic, environmental, and technological characteristics are treated as parameters relevant to the ecological structure of the community.

Planning 715 Seminar in Industrial Location and Regional Development. Fall term. Credit three hours. Mr. Czamanski.

Topics include interregional location theory and a review of various techniques of selecting optimum locations. The effects of new plants upon regional development are discussed as well as economic problems of declining open regions. Knowledge of mathematics and of modern quantitative methods is not a precondition for admission, but ability to master them during the course is assumed.

Planning 716 Advanced Urban and Regional Theory. Fall term. Credit two hours. Prerequisite: permission of instructor. Mr. Jones.

Seminar in the theory of urban spatial organization. Economic, technological, and social factors leading to urbanization and various kinds of spatial organizations will be explored. Major theoretical contributions to the understanding of intraregional and intra-urban distribution of population and economic activity will be reviewed.

Planning 717 Seminar in Urban and Regional Theory. Spring term. Credit two hours. Prerequisite: permission of instructor. Mr. Jones.

A continuation of Planning 716 concentrating on recent developments.

Planning 719 Informal Study in Urban and Regional Theory. Either term. Credit as assigned. Prerequisite: permission of instructor. Staff.

Planning Theory, Administration, and Implementation

Planning 520 Planning Theory. Fall term. Credit three hours.

Introduction to theory of city and regional planning. Planning is considered as a method of decision making with the purpose of achieving a command over the major tools for problem identification, analysis, and resolution.

Planning 521 Politics of the Planning Process. Fall term. Credit three hours. Mr. Clavel.

Theories of the planning process are compared with concepts of political process and political change. Points of tension, overlap, and complementarity are examined in the context of city and regional planning and development agencies, intergovernmental relations, the regulatory process, neighborhood and subregional development movements, and national planning agencies. Alternative models for the study of such institutions and processes will be assessed for their usefulness as guides to planners and researchers.

Planning 523 Legal Aspects of Planning. Spring term. Credit two hours. Prerequisite: Planning 510 or permission of the instructor. Mr. Reps.

Legal aspects of preparing and administering zoning ordinances, subdivision regulations, housing codes, official map regulations, and related subjects.

Planning 620 Planning Administration. Fall term. Credit four hours. Prerequisite: Planning 520 or permission of the instructor. Mr. Clavel.

A seminar examining organizational and administrative models relevant to plan formulation and implementation. The themes of hierarchy, control, specialization, representation, professionalization, and organizational development are dealt with in the context of planning theory and social system change. Applications are made to such programs as community action, regional development, urban renewal and land use control.

Planning 622 Techniques of Planning Implementation and Control. Fall term. Credit three hours. Mr. Riordan.

The purpose of this course is to examine one subset of new developments in methods for analyzing and coordinating complex projects composed of many interrelated activities. Particular attention given to a discussion of the two most well known versions of the network-based management control systems, viz., CPM (Critical Path Method) and PERT (Program Evaluation and Review Techniques). Special attention to the use of digital computer simulation as a potentially powerful extension of these systems.

Planning 624 Urban Land Policy and Programs. Fall term. Credit two hours. Prerequisite: Planning 523, or permission of the instructor. Mr. Reps.

Consideration of major problems of urban land control and management and possible solutions. Subjects for discussion include taxation as a method of land-use planning, compensation and betterment, large-scale

public land acquisition, subsidies and incentives, and acquisition of development rights or easements. Several public planning systems of other countries will be studied, contrasted with the United States, and evaluated.

Planning 626 Metropolitan Growth, Open Space, and New Communities. Fall term. Credit two hours. Prerequisite: permission of the instructor. Mr. Reps.

Investigation of the role of new towns and programs of new town planning and development in western society. Topics to be covered include the following: historical background of new towns programs in France, England, Switzerland, Ireland, and colonial America; Ebenezer Howard and the garden city movement in England; the British New Towns Act of 1946 and its administration; the planned capitals of Washington, Canberra, Brazilia, Chandigarh, Islamabad, Ankara, New Delhi; planned state capitals in the United States; Greenbelt towns of the resettlement administration; postwar private enterprise new towns in America; federal, state, and local legislation for new towns; recent proposals for new towns in developing countries; and the design, social and economic problems of new town development. Readings, research paper, and seminar presentations.

Planning 629 Informal Study in Legal Aspects of Planning. Either term. Credit as assigned. Prerequisite: permission of the instructor. Mr. Kelly.

Planning 720 Seminar in Planning Theory. Fall term. Credit two hours. Prerequisite: permission of the instructor. Mr. Jones.

A survey of the works of scholars who have contributed to current thinking about planning theory. The course deals with alternative assumptions concerning models of man and theoretical concepts concerning the nature of planning today.

Planning 729 Informal Study in Planning Administration. Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

Planning Analysis

Planning 531 Planning Analysis. Spring term. Credit four hours. Prerequisite: Planning 520. Mr. Jones.

City planning applications of general analytical techniques of social science; population, economic, land-use, and transportation models.

[Planning 533 Planning Methods and Techniques. Spring term. Credit three hours. Prerequisite: Planning 510, or permission of the

instructor. Mr. Parsons. Not offered in 1970-71.

Standards and survey methods for measuring education, recreation, and other community facility needs. Commercial, industrial, and residential land-use planning; transportation, housing, and environmental quality surveys.]

Planning 536 Introduction to Computers in Planning. Fall term. Credit two or three hours. Mr. Saltzman.

An introduction to the use of computers in the problem-solving and planning processes. Students will run programs on the Cornell computer using Fortran or other appropriate programming language. Brief introduction to computer systems and the use of library routines. Advantages and limitations of using computers will also be considered.

Planning 630 Planning Public Investments. Fall term. Credit three hours. Prerequisite: permission of the instructor. Mr. Riordan.

A detailed and rigorous examination from the point of view of theory and practice of the following methods that are currently being used in the planning and evaluation of public investments: benefit cost analysis; cost-effectiveness analysis; and capital budgeting. In addition, the integration of these methods into planning-programming-budgeting-systems will be discussed.

[Planning 631 Research Methods in Planning. Spring term. Credit four hours. Not offered in 1970-71.

Basic coverage of some of the more common research techniques used in the social sciences, including a survey of basic data sources, methods of survey research, ecological methods, and some of the more fundamental statistical methods. A number of the methods covered will be utilized in developing a major research report in conjunction with requirements for the following year's field problem.]

Planning 632 Analyses for Planning Decisions I. Fall term. Credit three hours. Prerequisite: permission of instructor. Mr. Saltzman.

This course and Planning 633 will introduce some statistical and analytical methods and techniques that are applicable in the definition, analysis, and solution of various types of planning problems. The nature of scientific inquiry and decision making and their relation to appropriate planning processes will be considered. This first term will also consider the use of probability and statistics in drawing inferences from measurable experiences. Relevant topics in probability, sampling, estimation, hypothesis testing, and prediction will be examined.

Planning 633 Analyses for Planning Decisions II. Spring term. Credit three hours.

Prerequisite: Planning 632 or equivalent, and permission of instructor. Mr. Saltzman.

A continuation of Planning 632. This second term will consider additional conceptual and applied techniques for rational decision making in the planning process. Some or all of the following topics will be introduced: decision making under uncertainty and value analysis, linear programming, network analysis, simulation, and cost/benefit analysis. Applications in the public sector will be examined as appropriate.

Planning 637 Planning and Management Information Systems. Spring term. Credit three hours. Prerequisite: Planning 536 or equivalent, and permission of the instructor. Mr. Saltzman.

Methods and techniques for the design and use of computer-based planning and management information systems will be considered. The role of the computer and its effects on various planning, control, and the decision functions will be introduced. Important hardware and software considerations in storing, processing, and retrieving of planning and management information will be covered including data organization, on-line and batch processing, multiprogramming, file structures, telecommunications, etc. Applications in various public, medical, and business organizations will be examined. Students will be expected to program and run problems on the Cornell computer system.

Planning 732 Seminar in Regional Social Accounting. Fall term. Credit three hours. Mr. Czamanski.

Advanced seminar in methods of construction and regional application of social accounting. Topics covered include income and product accounts, balance of payments, money flows, and wealth accounting. Extensive references are made to methods used in various countries and to recent regional case studies.

Planning 733 Seminar in Regional Interindustry Analysis and Programming. Spring term. Credit three hours. Mr. Czamanski.

Advanced treatment of regional industrial structure, methods of construction and applications of input-output, linear programming, integer and non-linear programming, elements of game theory.

Planning 736 Seminar in Urban and Regional Information Systems. Fall term. Credit three hours. Prerequisite: Planning 637 or equivalent, and permission of instructor. Mr. Saltzman.

An examination of problems, methods, and uses of computer-based information systems in urban and regional planning. Subjects to be covered vary from year to year and may, for example, include topics in the definition,

acquisition, and organization of information for large scale data bases; economic considerations in the use of information systems; analysis of applications in transportation, housing, health, and land use studies; urban simulation models; applications of computer graphics in planning; etc. Students will be expected to undertake a significant term project.

Planning 739 Informal Study in Planning Analysis. Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

Planning Design and Practice

Planning 540 Introduction to Planning Design. Fall term. Credit three hours. For graduate planning students without undergraduate training in design. Mr. Stein.

Introduction to the tools of physical design and graphic presentation. Investigation of the sources of basic information for physical design, the formulation of a physical design program, the preparation of solutions to elementary design problems and presentation techniques.

Planning 541 Planning Design. Spring term. Credit two or four hours (two hours for seminars or four hours for both studio and seminars). Prerequisite: Planning 540. Mr. Stein.

Presentation of theories of planning design and the review of methods and techniques for surveying, analyzing, and designing parts of the physical environment. Studio work will focus on physical problems with special emphasis given to the design of residential and commercial developments.

Planning 542 Internship Program in Planning and Public Administration. Summer term. Credit three hours. Open to graduate students in planning and public administration and others by permission. Mr. Parsons, staff, and visiting lecturers.

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. Occasional openings with citizen groups and private consulting firms. Full-time work at current salaries supplemented with evening lectures and discussions two evenings a week. In addition, there are several field trips in the New York area and to other east coast cities. (Instruction period for the course in the New York program is limited to July and August).

Planning 640 Field Problem in Urban Planning-Advocacy Planning. Fall term. Credit six hours. Developed primarily for graduate stu-

dents in city and regional planning but open to others with consent of the instructor. Staff.

This course will offer the student the opportunity to apply some of the theories and techniques of analysis and planning to real problem situations. It also will provide the student with the opportunity to learn firsthand about the problems of low-income individuals and groups and to develop an understanding of how planners can serve such a clientele. Much of the course work will be carried out in cities and towns convenient to Ithaca located in upstate New York.

Client contacts have already been made and the energy of the class will be devoted (a) to providing continuing services assisting the groups with problems that will arise during the coming semester, and (b) to investigating the process of community organization and development. The format of the bulk of the course is still in the experimental stage. Much will depend upon the interests of the students and the needs of the clients.

While the course series has been developed primarily for graduate students in city and regional planning, it is open to graduate students in other departments. Any non-departmental student who may wish to enroll in this course should contact the faculty members in charge.

Planning 641 Field Problem in Urban Planning-Advocacy Planning. Spring term. Credit three to six hours as arranged. Prerequisite: permission of the instructor. Mr. Parsons and staff.

The follow-up of work begun in Planning 640 to provide continuous planning services to client groups. New students can enter in the spring term and students who completed Planning 640 in the fall term can continue in this course.

Planning 642 Seminar in Urban Design. Fall term. Credit three hours. Prerequisite: Architecture 105 or Planning 540 and permission of the instructor. Messrs. Parsons and Stein.

Investigation of historical and current thought on the visual aspects of cities, including evaluation of technological and cultural influences on urban design, perception of urban form, and relationships between contemporary city planning process and visual form in cities.

Planning 644 Design and Conservation (Architecture 465). Fall term. Credit two hours. Messrs. Jacobs and Jones.

The rationale for and methods of utilizing existing cultural and aesthetic resources in the planning and design of regions and cities.

Planning 645 Documentation for Preservation Planning (Architecture 466). Spring term. Credit two hours. Mr. Jacobs, staff, and visiting lecturers.

Methods of collecting, recording, processing, and analyzing architectural and cultural survey materials.

Planning 646 Workshop in Heuristic Gaming Techniques. Fall term. Credit two hours. Limited enrollment with priority to students taking the planning field problem concurrently. Mr. Feldt and staff.

Exploration and use of a limited number of heuristic gaming devices dealing with problems in planning and urban theory. Special attention will be given to models representing the community under analysis in the field problems as well as to models dealing with more abstracted urban and regional configurations.

Planning 648 Field Problem in Urban Planning—Comprehensive Planning. Fall term. Credit three to six hours as arranged. Prerequisites: Planning 531 and 541 or permission of the instructors. Messrs. Feldt, Parsons, Stein and staff.

Research and analysis in an urban area leading to the preparation of comprehensive plans and effectuation programs; use of operational gaming techniques in the planning process; lectures, field trips, and individual and group reports.

Planning 649 Informal Study in Planning Practice. Either term or summer. Credit as assigned. Prerequisite: permission of the instructor. Staff.

Planning 749 Informal Study in Urban Design. Either term. Credit as assigned. Prerequisite: permission of instructor. Staff.

Urban Renewal and Housing

Planning 651 Seminar in Urban Renewal. Spring term. Credit two hours. Prerequisite: Planning 510 or permission of the instructor. Mr. Winston.

An exploration of current programs to revitalize our cities, the concepts of blight and urban renewal, and discussion of current policies and procedures in federal, state, and local government.

Planning 655 Urban Ghetto Development. Spring term. Credit one to four hours as arranged. Mr. Vietorisz.

The purpose of the course is to present broad aspects of the problem of ghetto development in a series of lectures, complemented by original research work carried on in a number of working groups which report on and discuss their progress in monthly sessions. Ghetto development is taken to mean comprehensive community development, covering economic, social, cultural, and political aspects. The lectures will necessarily be given from the economist's point of view; the work-

ing groups, however, are expected to complement this with the points of view of other disciplines. While the lectures will be prepared and self-contained, much of the material to be presented and discussed in the working group sessions is to be put together by the participants.

Planning 753 The Economics of Intrametropolitan Land Use. Spring term. Credit two hours. Prerequisite: permission of the instructor. Mr. Czamanski.

The spatial arrangement of urban functions, value as determinant of land use, measurement methods, urban structures and forms, public interest and controls, urban renewal and redevelopment, social and economic costs and benefits. Location of residential and industrial areas and retail center.

Planning 759 Informal Study in Housing and Urban Renewal. Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

Regional and Comparative Planning

Planning 660 Introduction to Regional Development Planning. Fall term. Credit four hours. Prerequisite: Planning 531 or permission of the instructor. Mr. Goldsmith.

The focus will be on problems of and theories about development of lagging, underdeveloped, or poor regions of both industrial and developing nations. Readings will survey various theoretical works upon which regional development planning is, or ought to be, based. The latter parts of the course will deal with the difficult transition from theory to planning recommendations and policy implementation. Brief case studies will be used for illustration.

Planning 663 Regional Planning and Development in Developing Countries. Spring term. Credit four hours. Prerequisite: Planning 660 or permission of the instructor. Mr. Goldsmith.

Selected theories and development problems from Planning 660 will be elaborated, deepened, and applied. Several extensive case studies of development planning will be analyzed and evaluated with those theories and with criteria suggested by them.

Planning 669 Informal Study in Comparative Planning. Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

Planning 760 Seminar in Regional Model Construction. Fall term. Credit three hours. Prerequisites: Planning 732, or 733 or equivalent, or permission of instructor. Mr. Czamanski.

Elements of a model, calibrating and simulation. Treatment of capital accumulation, existing resources, stability, disembodied and embodied technical progress. Vintage models, problems of capital valuation and capacity. Labor and migrations, balanced and unbalanced growth. The Harrod-Domar model, the two gaps, shift analysis. Some two- and multi-sector models.

Planning 761 Econometric Methods in Regional Planning. Spring term. Credit three hours. Continuation of Planning 760. Mr. Czamanski.

Dynamic elements in regional models, treatment of time, depreciation, replacement and gestation lags. Linear and nonlinear systems. Elements of regional growth, friction of space, factor mobility, externalities and allocation of resources, growth poles, industrial complex analysis. Methods of estimating regional models, identification, recursiveness, indirect methods. Some recent regional models.

Planning 769 Informal Study in Regional Planning. Either term. Credit as assigned. Prerequisite: permission of instructor. Staff.

Environmental Health Planning

Planning 570 Environmental Health Planning. Fall term. Credit two hours. Mr. Riordan.

Introduction to concepts and issues in environmental health planning. Topics covered include the planning problems involved in the control of water quality, liquid and solid waste disposal, air quality, and housing quality.

Planning 571 Selected Problems in Urban Sociology: The Urban Neighborhood. Spring term. Credit three hours. Enrollment limited. Consent of the instructor required. Mr. Smith.

An examination of the concept of neighborhood in urban society based upon a consideration of the interrelationship between design elements and human behavior. Major theoretical and empirical approaches to the neighborhood will be reviewed and placed in the context of recently developing thought, practice, and research in urban planning theory.

Planning 671 Planning and Evaluation of Environmental Health Programs and Projects. Spring term. Credit three hours. Prerequisite: Planning 630 or permission of the instructor. Mr. Riordan.

The major focus is an examination of the use of quantitative methods and economic analysis as aids to social decision making with regard to action in the area of environmental health. The purpose is to expose the student who already possesses a methodo-

logical competence to the application of these methods in the study of the particular problems of environmental health. Topics covered include rational social decision making and environmental health; the economics of environmental quality management; investment models for the size and location of regional systems of waste treatment, water treatment, and solid waste disposal facilities; and selected mathematical and statistical models used to describe, explain, or identify selected environmental health problems.

[Planning 672 Neighborhood Theory. Fall term. Credit three hours. Prerequisite: Planning 571 or permission of the instructor. Not offered in 1970-71.

An advanced seminar on environmental health planning in neighborhoods, continuing the exploration of physical and social relationships in the design of the residential environment. Special emphasis is given to the decisions of the urban designer and the architect concerning physical aspects of the neighborhood and their relevance to social and psychological goals.]

Planning 673 Economic Analysis and Human Resources Planning. Spring term. Credit three hours. Prerequisite: Planning 630 or permission of the instructor. Mr. Riordan.

The purpose of this course is to display the application of economic analysis as it is currently being used in the areas of health planning, educational planning, selected areas of social planning and urban renewal and housing and to explore the potentiality for more extensive and powerful use in the future. The emphasis is upon application; students are assumed to have a foundation in basic economic theory and such techniques as PPBS, benefit cost analysis, and cost-effectiveness analysis.

Planning 779 Informal Study in Environmental Health Planning. Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

Social and Social Facilities Planning

Planning 580 An Introduction to Social Planning. Fall term. Credit three hours. Mr. Clavel, staff, and visiting lecturers.

Review of concepts and labels for various approaches to planning with people (individually and collectively) as the units of analysis. Presentation of selected methods specific to social planning as applied to the social services. Examination of planning in the social services including 1) substance of policy and planning in these sectors and 2) their contextual assumptions of American society.

Planning 581 Case Studies in Human Resource Development Planning. Spring term. Credit two hours. Mr. Smith, staff, and visiting lecturers.

A review of methods and techniques of planning for human resource development. Specific illustrations from the fields of social, health, and educational planning, as well as more comprehensive social planning efforts, will be examined.

Planning 685 Institutional Planning. Spring term. Credit three hours. Prerequisite: Planning 510 or 730 or permission of the instructor. Mr. Parsons.

A seminar in programming and area planning of facilities for institutions including universities, medical centers, and churches. Administrative organization, space use studies, program development, location and function analysis, enrollment projection, and institutional systems. Application of city planning techniques to institutional planning.

Planning 789 Informal Studies in Social and Social Facilities Planning. Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

Theses

Planning 699 Thesis in City or Regional Planning. Either term. Credit as assigned.

Planning 790 Planning Research Seminar. Fall and spring terms. Credit one hour. Staff. Presentation and discussion of current departmental research. Registration limited to advanced doctoral candidates.

Planning 799 Dissertation in City or Regional Planning. Either term. Credit as assigned.

Advanced independent research by candidates for the Ph.D. degree.

General Information

Undergraduates

Admission and Related Information

It is the policy of Cornell University actively to 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. The University is proud of the cosmopolitan makeup of its student body, believes in the educational values inherent in bringing to the campus persons of widely different backgrounds, and directs its admissions policy to the preservation of this fundamental characteristic. In choosing from among candidates of approximately equal qualifications, some preference may be given to those whose homes are in areas not adequately represented in the student body.

The number of students that may be admitted each year in each program, undergraduate and graduate, is limited. Preference is given to those applicants whose academic preparation and character show greatest evidence of professional promise.

Students entering the College are reminded that they are entering highly specialized programs with the intention of becoming professional artists or architects. In a few cases, students may find that their aims change when they are in residence, and it is, therefore, important for all to understand that transfer to other programs in Cornell is not possible as a rule until the student has completed a full year in the program he originally entered.

A maximum of sixty students a year matriculate in the program in architecture; the entering class in art is limited to thirty students. Those selected for admission must have demonstrated, without question, through their previous schooling the intellectual capacity to carry the classroom work and to profit from the instruction offered. Intellectual preparedness is judged by the candidate's whole secondary school record, the recommendations of his school principal, and the Scholastic Aptitude Test of the College Entrance Examination Board. Transfer students will be accepted for admission only in September.

The intangible, but important, factors which form good character, personal integrity, and effective personality receive full consideration by the selection committee. Capacity for creative work and degree of motivation for a specific field of professional education are basic considerations.

Prospective students should write to the Office of Admissions, Day Hall, Cornell University, Ithaca, New York 14850, for forms to be used in making application for admission. Applications for admission must be received at the University in ample time to allow credentials to be assembled, required tests to be completed, and the application to be reviewed by the Committee on Admissions. Secondary school students should, if possible, initiate their applications in the fall of the year preceding matriculation in college. Undergraduate applications for entrance in the College of Architecture, Art, and Planning should be completed by January 15. Graduate applications are

considered separately and may be received until March 15, or later, if places remain to be filled.

Every undergraduate applicant should plan to come to Ithaca during the fall term preceding the year for which he has made application for a visit to the College and an interview with a member of its Committee on Admissions. An appointment for this interview can be made by writing directly to the Office of the Dean, College of Architecture, Art, and Planning, Sibley Hall, Ithaca, New York 14850. Interviews will also be arranged in cities across the country during the month of February, and those who have not been able to come to Ithaca will be sent a list of these locations and times.

REQUIREMENTS FOR ADMISSION. All candidates for admission to the College must take the Scholastic Aptitude Test of the College Entrance Examination Board. Entrance credit on the basis of the school record will be granted only in those subjects in which the candidate has attained the college-recommending mark of the school.

Three years of a foreign language, ancient or modern, are required for entrance. Candidates who have less than three years of preparation in a foreign language, but who make a satisfactory score on the Achievement Test of the College Entrance Examination Board may meet the requirement. When the required language credit is not offered for admission, a letter of explanation of this deficiency must be sent to the Committee on Admissions for its consideration. If the applicant is admitted, the language requirement must be satisfied before graduation. If an applicant plans to continue in college the study of a language he has already begun, the College advises him to take the College Entrance Examination Board Achievement Test in that language, for placement in the proper course. Three college credits in a language are considered, for the purpose of making up the entrance requirement while in college, to be equivalent to one year of high school language credit.

Candidates for admission to the College must demonstrate satisfactory knowledge of the subjects listed below.

Architecture (B.Arch.) Sixteen units including English 4; mathematics 4; foreign language 3 (see above).

Mathematics must include intermediate algebra, plane geometry, and trigonometry, taken either as separate courses or included within comprehensive mathematics courses.

An acceptable course in physics, taken either in secondary school or in college, is required for graduation.

The program in architecture is purely professional in objective. Only those who are seriously interested in careers in architecture should make application for admission. Every candidate for admission is advised to read professional literature, visit professional offices, talk with students of architecture or recent graduates, and otherwise inform himself about the field. It is usually wise to resolve serious doubts by starting with a program of general education.

Art (B.F.A.) Sixteen units including English 4; college preparatory mathematics 2; foreign language 3 (see above). Remaining units should, in the main, consist of science and social studies (including history).

The program in art is preprofessional in objective. Those who are seriously interested in careers in painting, sculpture, or the graphic arts, are the most logical candidates. Every candidate for admission is advised to read art criticism and art history, to visit museums and galleries, and to otherwise inform himself about the field of art. Art work done by the applicant, or slides thereof, should be presented at the time of the interview. Examples of class assignments, or independent work, or both, are acceptable.

MILITARY TRAINING. As a land-grant institution chartered under the Morrill Act of 1862, Cornell has offered instruction in military science for more than ninety years. This instruction is provided through the ROTC programs of the three military departments, the army, the navy, and the air force.

These programs offer a male student the opportunity to earn a commission while he is completing his education, thus enabling him to fulfill his military commitment as an officer rather than through the draft. Participation in ROTC is voluntary. Interested students should consult the *Announcement of Officer Education*.

PHYSICAL EDUCATION. All undergraduate students must complete four terms of work in physical education. This requirement must be completed in the first two years of residence; postponements are to be allowed only by consent of the University Faculty Committee on Requirements for Graduation.

Exemption from this requirement may be made by the Committee designated above when it is recommended by the Cornell medical staff; or when unusual conditions of age, residence, or outside responsibilities require it.

For a student entering with advanced standing, the number of terms of physical education required is reduced by the number of terms which the student has satisfactorily completed (whether or not physical education was included in his program) in a college of recognized standing.

Publications describing the courses offered will be made available to entering students by the Department of Physical Education.

UNIVERSITY HEALTH REQUIREMENTS. Each entering student, graduate or undergraduate, is expected to assume personal responsibility for the health requirements adopted by the Board of Trustees of Cornell University. Prospective students should consult the *Announcement of General Information*. Permission to register for a new semester will not be granted unless all health requirements pertaining to the previous semester have been fulfilled.

TRANSFER STUDENTS. A student who has already attended another institution of collegiate rank is admitted at the beginning of the fall term. The applicant is required to meet all entrance requirements and to comply with the rules governing admission. In addition, he should file with the Office of Admissions, Day Hall, an official transcript of record of his work at the institution already attended, together with a certificate of honorable dismissal therefrom. He should also be prepared to send, if requested, a catalog of that

institution, writing his name thereon, and marking the courses he has taken as listed in the transcript. The Scholastic Aptitude Test of the College Entrance Examination Board is required.

ADMISSION AS A SPECIAL STUDENT. A person, especially one of comparative maturity, may, in certain circumstances, even without satisfying the entrance requirements, be admitted as a special student not a candidate for a degree. The applicant must give evidence of ability to do creditable work in the College, and his application for admission must be recommended by the department in which he proposes to do the main part of his work. He must file his application with the Office of Admissions, Edmund Ezra Day Hall.

If a person admitted as a special student without satisfying the entrance requirements subsequently satisfies those requirements, he may be graduated under the ordinary regulations of the College.

Special students in the College of Architecture, Art, and Planning must be at least twenty-one years of age.

Expenses

Living costs depend to a great extent upon the individual's standard of living. Recent estimates indicate that students spend approximately \$1,200 a year for room and board. Laundry and cleaning, books, instruments, and other supplies will cost about \$600 a year. Additional allowance must be made for clothing, travel, and incidentals.

Undergraduate students should refer to the *Announcement of General Information* for the amounts of the tuition and the General Fee, as well as details concerning payment.

University Summer Session

It is usual for the Department of Art to offer certain studio courses as part of the University's six- or eight-week summer school program. Further particulars can be obtained from the Division of Summer Session and Extramural Courses, Cornell University.

Special summer conferences and institutes are offered in addition, principally by the graduate program in City and Regional Planning. Particulars regarding these special offerings may be obtained from the College.

Summer Term in Architecture

Whenever there is sufficient student demand and an adequate faculty available, a summer term will be offered at both graduate and undergraduate levels in the field of architecture. The term is usually of ten weeks' duration and carries credit for successful work.

At the undergraduate level the time is devoted exclusively to one subject, architectural design. Ten hours of credit will be given for successful completion of the work, and it may, with faculty approval, be considered one term of design as required in the curriculum. The number of hours of credit in excess of those required for the sequence of study may be allocated to elective credit hours.

Registration will be limited to students of satisfactory standing who have completed the sophomore year of study. Two summer terms in consecutive years will not be permitted without the approval of the faculty.

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

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

Undergraduate Scholarships

Prospective students requiring financial assistance should write to the Office of Scholarships and Financial Aid, Cornell University, Day Hall, Ithaca, New York 14850; students in residence should call in person at that office.

As one of the more than 900 colleges that are members of the College Scholarship Service, Cornell follows the general policies as outlined by that organization. Scholarship awards are made on the basis of academic achievement and promise, but the actual cash stipends vary according to the financial need of the applicant. As a matter of policy every effort is made by means of scholarship aid and the student work and loan programs to make it financially possible for students of promise to come to and remain at Cornell.

Financial assistance is awarded through scholarships and long- and short-term loans available to students in all branches of the University, and through scholarships administered by the various colleges.

The scholarships described below are awarded by the Scholarship Committee of the College of Architecture, Art, and Planning. All awards are made on the basis of promise and need.

DEAN'S SCHOLARSHIPS. The University has made available annually approximately \$60,000 which may be awarded to undergraduate students, including entering students, in architecture and art.

GILLESPIE PRIZE SCHOLARSHIPS. Scholarships totaling \$800 may be awarded each year to fourth- or fifth-year students in architecture. These awards are made from the bequest of a former student of the College, the late Albert D. Gillespie, and are granted on the basis of general academic performance and need.

ESCHWEILER PRIZE SCHOLARSHIP. This award is made from a bequest of Alexander C. Eschweiler, Jr., '15, in memory of his father, Alexander C. Eschweiler, Sr., '90. An annual award of approximately \$700 is open to undergraduate students in architecture.

SARGENT, WEBSTER, CRENSHAW, AND FOLLEY SCHOLARSHIP. Open to students in architecture. Awarded on the basis of general academic performance and need. The scholarship is a gift from Sargent, Webster, Crenshaw, and Folley, architects. Annual award, \$350.

THE WALDO S. KELLOGG SCHOLARSHIP FUND. Through a bequest made by Mrs. Frances E. Osborne Kellogg in memory of her husband, Waldo S. Kellogg '93, \$5,000 is available annually to students in the undergraduate and graduate programs in architecture.

H. R. DOWSWELL SCHOLARSHIP FUND. Open to a student in the College who stands in the top quarter of his class academically, who has a good personality, and who has demonstrated qualities of leadership. This fund was established by Col. John R. Dowswell and Mrs. Harold E. Van Der Linde in memory of their father. Annual award, \$700.

NANCY A. BERNSTEIN SCHOLARSHIP. Open to a promising undergraduate woman in Art in need of financial assistance. This scholarship is granted from a fund established by Mr. and Mrs. Nathan C. Bernstein and Margaret Bernstein in memory of Nancy A. Bernstein '49. Annual award, \$700.

THE CHARLES A. HOLCOMB MEMORIAL SCHOLARSHIP of \$200 was established in 1963 by Mrs. Holcomb in memory of her husband, who received his B.Arch. degree from Cornell in 1920. It is to be awarded to a student, preferably a sophomore, in the College.

GEORGE LOUIS COLEMAN SCHOLARSHIPS. These scholarships were established for students in the College in 1965 through a bequest of Louise Gertrude Coleman, in memory of her husband, a devoted alumnus of Cornell, B.S. in architecture '95.

THE NORMAN C. WEIFFENBACH MEMORIAL FUND established in July 1967 by Mr. and Mrs. Eugene W. Kettering in memory of Mrs. Kettering's father, Norman C. Weiffenbach, architecture '04. The sum of approximately \$3,000 is to be awarded to worthy and financially needy young men or women.

THE GEORGE FRASER AWARDS. Established in 1968 for the benefit of one or more upperclassmen or graduate students who, in the opinion of the faculty, has done outstanding work and who preferably is in need of financial assistance.

THE CLARKE AND RAPUANO SCHOLARSHIP is open to any student in the College of Architecture who is in need of financial assistance. An annual award set up by Gilmore D. Clarke, former dean of the College, and Michael Rapuano, B.L.A. '27. Annual award \$1,000.

Traveling Fellowships

THE JOHN W. ROOT TRAVELING SCHOLARSHIP is an annual award of \$1,500, open to any student in the College whose record indicates excellence in planning and design or in any other phase of architecture for which he or she evidences a potential. This award was established in 1964 by the partners of Holabird and Root as a memorial to John W. Root '09.

THE ROBERT JAMES EIDLITZ FELLOWSHIP, the gift of Sadie Boulton Eidlitz, is available to persons who hold a degree in architecture from Cornell or who are now graduate students in architecture at Cornell. Its purpose is to supple-

ment the professional training, by foreign travel or in other ways, of those who could not otherwise afford it. The income of the fund, \$2,200 per year, may be awarded to one or more candidates.

Medals and Prizes

THE CHARLES GOODWIN SANDS MEMORIAL MEDAL, founded in 1900 by the family of Charles Goodwin Sands of the class of 1890, may be awarded for work of exceptional merit done by a student in courses in architectural design, or by a student in the art curriculum for work of exceptional merit in painting and composition or sculpture. Theses in architecture or art are eligible for medal consideration. Two grades of this medal, the silver and the bronze, are recognized.

THE CLIFTON BECKWITH BROWN MEMORIAL MEDAL was established in 1901 by John Harkness Brown in memory of his brother, Clifton Beckwith Brown of the class of 1900, who was killed on the field of battle at San Juan Hill. A silver replica is awarded by the faculty to that member of the graduating class who has attained the highest standing in architecture 107, 108, 109, and 110. The award is withheld if the standard is not considerably higher than that required for graduation.

THE FACULTY MEDAL IN ART is awarded each year to the member of the graduating class in the curriculum in art who, by his academic record and work in the studio, has, in the estimation of the faculty, shown the greatest promise of future achievement in the field of art.

ANDREW DICKSON WHITE MUSEUM STUDENT ART PURCHASE PRIZE. The income of this fund, established by an anonymous donor, provides prize money for the purchase of works of art made by students as part of their regular University class work.

THE STUDENT MEDAL OF THE AMERICAN INSTITUTE OF ARCHITECTS is awarded to the member of the graduating class in architecture who has maintained the best record throughout the entire course.

THE FUERTES MEMORIAL PRIZES IN PUBLIC SPEAKING, founded in 1912 by Charles H. Baker, a graduate of the School of Civil Engineering of the class of 1886, are offered annually to members of the junior and senior classes in the Colleges of Engineering and Architecture, Art, and Planning for excellence in public speaking. The three prizes are of \$80, \$40, and \$20.

THE PAUL DICKINSON PRIZE, established in 1927 by Mrs. George A. Shedden of the class of 1923 in memory of her father, is awarded to the student in the first-year class of the College who has attained the highest record. The prize is not awarded unless the record is well above the average of the first-year work in the College.

THE EDWIN A. SEIPP MEMORIAL PRIZES, one of \$45 and one of \$25, were established in 1948 by Mrs. E. A. Seipp in memory of her husband, an alumnus of the class of 1905. They are awarded as first and second prizes in a special competition in third-year design.

THE BAIRD PRIZES, one of \$25 and one of \$15, are awarded as first and second prizes in a special problem competition in second-year design. The fund, established in 1927, was the gift of Mrs. M. Z. Baird.

THE EDWARD PALMER YORK MEMORIAL PRIZES, one of \$25 and one of \$15, are awarded as first and second prizes in special competition for students in introductory design. The problem, lasting approximately one week, is given in the second term. The fund, established in 1931, was the gift of Mrs. Edward P. York.

THE NEW YORK SOCIETY OF ARCHITECTS' MEDAL AND CERTIFICATE are awarded annually to that senior student who, in the opinion of the faculty and the Society's committee, is the leader of his class in total design—that is, design, planning, and construction.

THE ALPHA RHO CHI MEDAL is awarded by Alpha Rho Chi, a professional architectural fraternity, to a student in the graduating class who has shown ability for leadership, has performed service to the school, and gives promise of professional merit through his attitude and personality.

THE EDITH AND WALTER KING STONE MEMORIAL PRIZES, awarded to juniors at the end of their third year, are given on the basis of promise and accomplishment in the field of art.

THE OTTO R. EGGERS MEMORIAL PRIZE (\$500) was established in 1965 by Eggers and Higgins, architects. Awarded annually in design, it is for excellence in graphic presentation throughout the year, judged for the degree of clarity, completeness, and conviction with which it performs its function.

THE MACKESEY PRIZE, in honor of the former dean of this College, Thomas W. Mackesey, is awarded to a candidate for a degree in City and Regional Planning who has demonstrated unusual competence in his academic work or who, by his qualities of personality or leadership, has significantly contributed to the intellectual advancement of his fellow students.

THE AMERICAN INSTITUTE OF PLANNERS STUDENT AWARD is presented, in recognition of outstanding ability, to a candidate for the professional degree in planning (M.R.P.). The qualities to be identified include consistently high academic record, leadership ability, maturity, research ability, and professional promise.

THE PETER B. ANDREWS MEMORIAL THESIS PRIZE is awarded for the best thesis prepared for the degree of Master of Regional Planning. It is granted from the income of a fund established by Mrs. Peter B. Andrews and Dr. George C. Andrews in memory of Peter B. Andrews, B.Arch. '55, M.R.P. '57.

Graduate Students

Admission and Related Information

Graduate programs in the College of Architecture, Art, and Planning are of two general types, requiring different admissions procedures. First, profes-

sional programs leading to the degrees of Master of Architecture (urban design), Master of Fine Arts, and Master of Regional Planning are formally under the jurisdiction of the Division of Architecture and Fine Arts of the Graduate School. Candidates for admission should apply for the necessary forms to the appropriate office at *Cornell University, Ithaca, New York 14850* as follows: Candidates for the degree of Master of Architecture should write to the *Chairman, Department of Architecture, Sibley Hall*; candidates for the degree of Master of Fine Arts should write to the *Chairman, Department of Art, Franklin Hall*; candidates for the degree of Master of Regional Planning should write to the *Chairman, Department of City and Regional Planning, Sibley Hall*.

Second, academic programs leading to the degrees of Master of Science (architectural sciences), Master of Arts (history of architecture and urban development), and Doctor of Philosophy (architectural history, city and regional planning) are formally under the jurisdiction of the dean of the Graduate School, and candidates for admission should apply for the necessary forms to the *Graduate School, Sage Graduate Center, Cornell University, Ithaca, New York 14850*, sending a copy of the letter to the appropriate department chairman in the College of Architecture, Art, and Planning, so that the College may know when an application is in process. Regulations governing the students in these academic programs may be found in the *Announcements of the Graduate School*.

Graduate applications for study in architecture, art, or city and regional planning should be completed by February 1 in order to be considered for awards of fellowships, scholarships, and other financial aids, but may be received until March 15. When places remain to be filled, later applications will be accepted. The applications from United States citizens and from foreign applicants who reside in the United States and Canada must be accompanied by a \$15 nonrefundable application fee. Foreign applicants residing elsewhere who have been accepted for admission must pay this application fee before registration.

Foreign students whose undergraduate training has been outside the United States are usually admitted to provisional candidacy during the first semester, during which their qualifications to continue in their selected programs will be evaluated. In most cases, they should plan to spend at least four terms in residence.

Foreign applicants whose native language is not English, but who received their secondary school or their university education in the English language, must submit a statement certifying to this, signed by a responsible officer of a United States Embassy or Consulate or by an appropriate official of the educational institution involved. All other foreign applicants must take the National Council Test of English as a Foreign Language by arrangement with the Educational Testing Service, Princeton, New Jersey 08540, U.S.A., or the Michigan English Language Test by arrangement with the English Language Institute, University of Michigan, Ann Arbor, Michigan 48104, U.S.A. In either case, the test scores must be reported directly by the testing organization to the Graduate School as part of the essential application information, and no final action on applications will be taken until the scores have been received.

Both testing programs are available throughout the world. Information on times and places for administration of the tests may be obtained directly from the addresses given above. Since these tests are diagnostic, admission to those applicants whose scores indicate unsatisfactory command of English may be denied, or it may be made contingent upon evidence of improved command of English.

All applicants for admission to the programs in history of architecture and urban design, architectural science, and city and regional planning who are currently residing in the United States are required to take the Graduate Record Examination (GRE) Aptitude (Verbal and Quantitative) Tests of the Educational Testing Service, and to have the scores sent to the College or to the Graduate School as part of their application materials. Information about the times and places of test administration may be obtained directly from the Educational Testing Service, Princeton, New Jersey 08540.

EXPENSES. Living costs depend to a great extent upon the individual's standard of living. Recent estimates indicate that students spend approximately \$260 a month for room and board and laundry. Books, instruments, and other supplies will cost about \$200 a year. Additional allowance must be made for clothing, travel and incidentals.

Graduate students should refer to the appropriate *Announcement of the Graduate School* for information about tuition and fees.

UNIVERSITY HEALTH REQUIREMENTS. Health requirements for graduate students who are entering Cornell or who have been absent from the University for more than a year have been adopted by the trustees of Cornell University (see the *Announcement of General Information*). The responsibility for fulfilling these requirements rests upon the student.

GRADUATION REQUIREMENTS. Each candidate for a professional Master's degree follows a special program of study worked out in consultation with a faculty adviser who represents his department. A satisfactory thesis is required of every candidate for the Master's degree, although in special cases the Master of Architecture degree may be awarded without the thesis. Two bound copies of the thesis, prepared according to approved standards, must be submitted. In the case of a candidate for the M.F.A. degree, the thesis consists of one or more original works of art supplemented by a critical essay on an approved subject.

A final examination, arranged by the faculty adviser, must be passed in order to qualify for the Master's degree. The examination may be written or oral at the discretion of the faculty.

Graduation requirements for the academic degrees of Master of Arts, Master of Science, and Doctor of Philosophy are set by the Graduate School.

MILITARY SCIENCE. Courses in military science are open to graduate students who have certain specified qualifications. Those graduate students who are interested should apply to the Professor of Military Science, Barton Hall.

The courses available are described in the *Announcement of Officer Education*, which may be obtained by writing to the Announcements Office, Edmund Ezra Day Hall.

Financial Assistance

CORNELL FELLOWSHIPS. *The Announcement of the Graduate School: Humanities* carries full information about Cornell University graduate fellowships and scholarships for which both entering students and students in residence are eligible. These awards are made by the Fellowship Board of the Graduate School. Graduate fellowships carry stipends of from \$2,000 to \$3,000 plus tuition and general fees. Application forms may be obtained from the Office of the Graduate School.

The Eschweiler and Kellogg Scholarships and the Eidlitz Fellowships, described earlier in reference to undergraduates, are also available to graduate students in architecture.

TEACHING FELLOWSHIPS. Eighteen teaching fellowships are awarded by the College of Architecture, Art, and Planning. Fellows are assigned to aid in the instruction in the various areas of study offered by the College: architectural design, architectural sciences, city and regional planning, architectural history, painting, sculpture, and graphic arts. Fellowships carry a stipend of \$2,700 plus tuition and fees.

RESIDENCE HALL ASSISTANTSHIPS. A number of residence assistantships are available in the University residence halls for men and women graduate students. Remuneration varies from room only to room and board plus a stipend. A few assistantships open to married men provide an apartment plus a stipend. Applications should be addressed to the Office of the Dean of Students, Day Hall, Cornell University, Ithaca, New York 14850.

LOANS. University, New York State, and National Defense student loans are available to graduate students at Cornell. Applications should be made through the Office of Scholarships and Financial Aid, Day Hall, Cornell University, Ithaca, New York 14850.

ADDITIONAL SOURCES OF ASSISTANCE. Prospective graduate students are reminded that there are a number of private agencies and foundations which offer scholarships for highly qualified students. The American Institute of Architects, for instance, awards a number of such scholarships annually.

The Department of City and Regional Planning also awards a number of Richard King Mellon Fellowships in city planning and urban renewal for study in the M.R.P. program and several three-year traineeships supported by the United States Public Health Service.

Prospective students of city planning who are United States citizens should also investigate the New York State Regents Herbert H. Lehman Fellowships in the Social Sciences and Public and International Affairs. Information may be obtained from the Regents Examination and Fellowship Center, State Education Department, Albany, New York 12224.

Prospective foreign students should investigate awards under the fellowship program of the Organization of American States, the United Nations, United States Fulbright Commissions in many foreign countries, and the United States Agency for International Development. The United Nations publication, *Study Abroad*, lists thousands of scholarships and fellowships, many of them for study in the United States by citizens of other countries.

Facilities and Services

BUILDINGS. The College occupies Sibley Hall, Franklin Hall, the Foundry, and a research building at 109 Dearborn Place. In Sibley are the facilities for architecture and city and regional planning as well as the administrative offices and the Fine Arts Library. The Department of Art is housed in Franklin Hall. Sculpture and shop facilities are in the Foundry.

Through the generosity of the late Mrs. Lillian P. Heller, the College has acquired the home of William H. Miller, the first student to enroll for the study of architecture at Cornell and later a practicing architect in Ithaca. This building is used to house visiting teachers and guests of the College and for occasional receptions and social events.

LIBRARIES. The Fine Arts Library in Sibley Dome serves the College of Architecture, Art, and Planning through its collections on architecture, fine arts, and city and regional planning. A library of over 60,000 books, including 15,000 in the planning collection, it is capable of supporting undergraduate, graduate, and research programs. Some 1,600 serials are currently received and maintained for reference and recreation. In addition to a large collection of planning pamphlets and maps, the library has a growing collection of materials on the visual arts, including motion picture films, sound tapes, photographs, color prints, and microfilms.

The College maintains in Sibley Hall a slide library containing extensive files of lantern slides of architectural history and a large and growing collection of slides of art and architecture from all parts of the world. The library now includes approximately 175,000 slides.

The facilities of the other libraries on campus, including the John M. Olin Graduate and Research Library and the special libraries of other schools and departments, are also available to students.

EXHIBITIONS. Art galleries are maintained in the Andrew Dickson White Museum and in Willard Straight Hall, where loan exhibitions of paintings and graphic work by contemporary artists are held. Current work of students in the College of Architecture, Art, and Planning is shown in the exhibition areas in Sibley Hall and the gallery in Franklin Hall.

HOUSING. Cornell University provides residence halls on the campus for approximately 4,300 students. Meals may be taken where desired. Complete cafeteria and dining service is provided in Willard Straight Hall, the student union building; in Noyes Center, a new commons-type residentially based student union; a cafeteria in Noyes Lodge on the shore of Beebe Lake; and in some of the academic buildings. Freshmen are required to live in University residence halls; upperclassmen are not, but are individually responsible for making their own living and dining arrangements. An application form will be mailed to each candidate for admission as a freshman or a transfer student at the time of notification of provisional acceptance. Housing in University residence halls can be guaranteed for entering freshmen who have been admitted to the University and have filed dormitory applications by June 1. Further information about housing may be obtained from the Department of Housing and Dining, Day Hall.

Graduate Students. Sage Graduate Center provides dormitory housing for about 190 men and women. The building is in the center of the campus and provides a convenient cafeteria. Cascadilla Hall houses 155 men and women. Graduate students should make application for dormitory housing directly to the Department of Housing and Dining Services, Day Hall, Cornell University, Ithaca, New York 14850.

Married Students. The University operates the Pleasant Grove Apartments and the Hasbrouck Apartments, garden-type housing developments at the edge of the campus, and the Cornell Quarters, a housing development south-east of the campus.

Off-Campus Housing for undergraduate men, graduate students, or married students may be obtained in privately owned properties in Ithaca and the vicinity. The University, as a service to students, maintains a partial listing of available housing. Inquiries should be addressed to the Off-Campus Housing Office, Day Hall, Cornell University, Ithaca, New York 14850.

HEALTH SERVICES AND MEDICAL CARE. The health services for students are centered in two Cornell facilities: the Gannett Medical Clinic (out-patient department) and the Sage Infirmary. Students are entitled to unlimited visits at the Clinic. Appointments with individual doctors at the Clinic may be made, if desired, by calling or coming in person; an acutely ill student will be seen promptly whether he has an appointment or not. Students are also entitled to laboratory and x-ray examinations indicated for diagnosis and treatment, hospitalization in the Sage Infirmary with medical care for a maximum of fourteen days each term, and emergency surgical care. The cost of these services is covered in the General Fee.

Insurance is available, on a voluntary basis, to supplement the services provided by the General Fee. For further details, including charges for special services, see the *Announcement of General Information*. If, in the opinion of the University authorities, the student's health makes it unwise for him to remain in the University, he may be required to withdraw.

FACULTY ADVISERS. Each student will be assigned a faculty adviser who, with those in charge of preregistration, will assist the student in working out his academic schedule, term by term, while he is in the College. The Office of the Dean stands ready at all times to help and guide the student, not only in academic matters, but also, when possible, in personal problems and difficulties he may encounter. In addition, the Office of the Dean of Students has trained staffs of counselors who may be consulted by University students on nonacademic matters.

ASSISTANCE TO FOREIGN STUDENTS. The staff of the University's International Student Office is prepared to advise and assist students from other countries in every way possible. It is suggested that foreign students interested in studying at Cornell University write for advice on registration, living conditions, and other matters to: Director of the International Student Office, Cornell University, Day Hall, Ithaca, New York 14850.

UNIVERSITY PRIVILEGES. The student of the College of Architecture, Art, and Planning is entitled to the use of all the University's general facilities and privileges. He may elect courses of study in any of the University's colleges. Cornell has all the usual extracurricular activities ordinarily to be found at a university, and they are open to all students. They include musical and dramatic clubs, undergraduate publications, religious, social, and professional organizations, and a great variety of athletic sports both intramural and intercollegiate.

University Administration

Dale R. Corson, President of the University
Robert A. Plane, University Provost
Mark Barlow, Jr., Vice President for Student Affairs
Lisle C. Carter, Jr., Vice President for Social and Environmental Studies
W. Donald Cooke, Vice President for Research
Lewis H. Durland, University Treasurer
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
Robert D. Miller, Dean of the University Faculty
Steven Muller, Vice President for Public Affairs
Arthur H. Peterson, University Controller
Neal R. Stamp, Secretary of the Corporation and University Counsel

College Administration

Burnham Kelly, A.B., M.C.P., J.D., Dean of the College
Stuart Stein, B.Arch., M.C.P., Associate Dean of the College
Helena Y. Roscoe (Miss), B.S. Econ., Administrative Aide
Howard E. Bullock, Administrative Aide

Faculty

Architecture

Oswald M. Ungers, Chairman, Dipl.Ing. (Berlin), Professor of Architecture
Stuart M. Barnette, B.S. in Arch., Professor of Architecture, Emeritus
Hubert E. Baxter, B.Arch., Professor of Architecture, Emeritus
Ludlow D. Brown, M.Arch., Professor of Architecture
Thomas H. Canfield, B.S. in Arch., Professor of Architecture
Alan Chimacoff, B.Arch., M.Arch., Visiting Assistant Professor of Architecture
Gilmore D. Clarke, B.S., L.H.D., Professor of Landscape Architecture, Emeritus
Ralph Crump, B.Arch., Assistant Professor of Architecture
Michael D. Dennis, B.Arch., Assistant Professor of Architecture
Donald P. Greenberg, B.C.E., Ph.D., Associate Professor of Architecture
John A. Hartell, B.Arch., Professor of Architecture, Emeritus
Klaus Herdeg, B.Arch., M.Arch., Assistant Professor of Architecture
Tilman M. Heyde, Dipl.Ing. (Berlin), M.E. (Stuttgart), Assistant Professor of Architecture
Stephen W. Jacobs, A.B., B.Arch., M.F.A., Ph.D., Professor of Architecture
Burnham Kelly, A.B., M.C.P., J.D., Professor of Planning
Alexander Kira, B.Arch., M.R.P., Professor of Architecture
Alfred Koetter, B.Arch., Assistant Professor of Architecture
Archie Mackenzie, B.Arch., Assistant Professor of Architecture
R. Eugene Messick, B.Prod. Design, Assistant Professor of Architecture
Eugene David Montillon, B.Arch., Professor of Landscape Architecture, Emeritus
Christian Otto, B.A., M.A., Assistant Professor of Architecture
Charles W. Pearman, B.Arch., Associate Professor of Architecture
Colin Rowe, B.Arch., M.A., Professor of Architecture
Francis W. Saul, B.S., M.S., C.E., Associate Professor of Architecture
Werner N. Seligmann, B.Arch., Associate Professor of Design
John P. Shaw, B.Arch., M.Arch., Associate Professor of Architecture
Roger Sherwood, B.Arch., M.S.Arch., M.Arch., Assistant Professor of Architecture
David M. Simons, B.S.C.E., M.Arch., Associate Professor of Architecture
Stuart Stein, B.Arch., M.C.P., Associate Professor of Urban Planning and Design
George M. Trieschmann, B.S., B.A., M.S., Ph.D., Assistant Professor of Architecture
Frederick M. Wells, B.Arch., Andrew Dickson White Professor of Architecture, Emeritus

J. Alan Wells, B.Arch., Assistant Professor of Architecture

Art

Jason Seley, Chairman, B.A., Professor of Art

John E. Bosson, Jr., M.F.A., Assistant Professor of Art

Victor Colby, A.B., M.F.A., Professor of Art
Norman D. Daly, B.F.A., M.A., Professor of Art

Friedel Dzubas, Visiting Critic in Art

Kenneth Evett, A.B., M.A., Professor of Art

John A. Hartell, B.Arch., Professor of Art, Emeritus

James O. Mahoney, A.B., B.F.A., F.A.A.R., Professor of Art

Christian Midjo, Professor of Art, Emeritus
Gillian M. Pederson-Krag, B.F.A., M.F.A., Assistant Professor of Art

Jeffrey Poklen, B.A., M.F.A., Assistant Professor of Art

Steve Poleskie, B.S., Assistant Professor of Art

Arnold Singer, Associate Professor of Art

Jack L. Squier, B.S., M.F.A., Professor of Art

David von Schlegell, Visiting Critic in Art

City and Regional Planning

Kermit C. Parsons, Chairman, B.Arch., M.R.P., Professor of City and Regional Planning

Pierre Clavel, A.B., M.R.P., Ph.D., Assistant Professor of City and Regional Planning

and Assistant Professor of Rural Sociology
Stanislaw Czamanski, Lic. es Sc. Comm., Ph.D., Associate Professor of City and Regional Planning

Allan G. Feldt, B.S., A.M., Ph.D., Associate Professor of City and Regional Planning

William Goldsmith, B.S.C.E., Assistant Professor of City and Regional Planning

Michael Hugo-Brunt, B.Arch., M.C.D., M.Arch., Associate Professor of City and Regional Planning

Barclay G. Jones, B.A., B.Arch., M.R.P., Ph.D., Professor of City and Regional Planning, Acting Director of the Center for Urban Development Research

Burnham Kelly, A.B., M.C.P., J.D., Professor of Planning; Dean of the College of Architecture, Art, and Planning

Thomas W. Mackesey, B.Arch., M.C.P., Professor of Regional Planning; Vice President for Planning of the University

John W. Reps, A.B., M.R.P., Professor of City and Regional Planning

Courtney Riordan, B.S.C.E., Ph.D., Assistant Professor of City and Regional Planning

Sidney Saltzman, B.S., M.S., Ph.D., Associate Professor of City and Regional Planning

Richard A. Smith, B.A., M.R.P., Instructor in City and Regional Planning

Stuart Stein, B.Arch., M.C.P., Professor of Urban Planning and Design, Associate Dean of College of Architecture, Art and Planning

Ian R. Stewart, B.A., M.R.P., Instructor in City and Regional Planning

Bert Swift, B.A., M.P.A., Assistant Professor of City and Regional Planning; Assistant Professor of Agriculture Extension

Thomas Vietorisz, S.M., Ph.D., Visiting Professor of City and Regional Planning

Oliver C. Winston, B.A., B.S. in Arch., Lecturer in City and Regional Planning

Joseph Carriero, B.S. in Ed., Professor and Chairman of Department of Design and Environmental Analysis

David H. R. Shearer, B.A., M.S.L.S., Librarian

Martie W. Young, A.B., M.A., Ph.D., Professor and Chairman of History of Art

Elected Members of the Faculty

Joseph Carriero, B.S. in Ed., Professor and Chairman of Department of Design and Environmental Analysis

David H. R. Shearer, B.A., M.S.L.S., Librarian

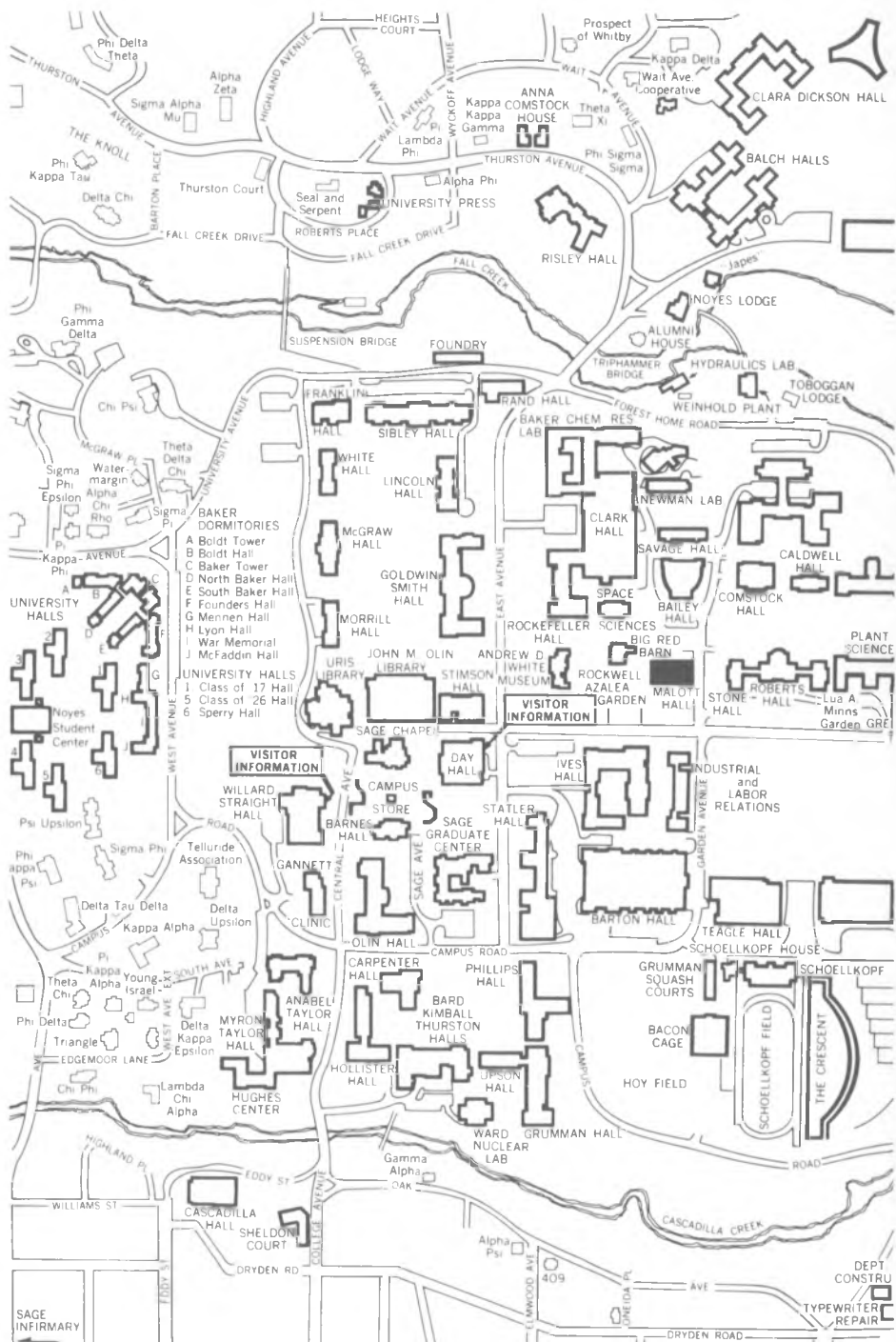
Martie W. Young, A.B., M.A., Ph.D., Professor and Chairman of History of Art

Student Body

ENROLLMENT, FALL 1970.....	467
Undergraduates	335
Architecture	245
Art	90
Men	239
Women	96
Graduates	132
Architecture	31
Art	12
Planning	89
Men	116
Women	16

GEOGRAPHICAL DISTRIBUTION

United States	432
Arizona	1
California	18
Colorado	4
Connecticut	11
Delaware	1
District of Columbia	4
Florida	2
Georgia	2
Hawaii	2
Illinois	25
Indiana	5
Iowa	1
Kansas	2
Nebraska	2
New Hampshire	3
New Jersey	29
New Mexico	1
New York	148
North Carolina	3
Ohio	27
Oklahoma	1
Oregon	2
Pennsylvania	37
Puerto Rico	6
Rhode Island	3
Tennessee	1
Louisiana	4
Maryland	24
Massachusetts	32
Michigan	8
Minnesota	2
Missouri	5
Texas	2
Vermont	2
Virginia	6
Washington	3
West Virginia	1
Wisconsin	2
Foreign	35
Canada	6
Chile	2
Colombia	1
England	4
Ethiopia	1
France	2
Greece	3
Haiti	1
Hong Kong	1
India	3
Israel	2
Italy	1
Japan	1
Korea	1
Spain	1
Taiwan	1
Venezuela	1
West Germany	2
Yugoslavia	1



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
- College of Architecture, Art, and Planning
- College of Arts and Sciences
- Department of Asian Studies
- Education
- College of Engineering
- New York State College of Human Ecology
- School of Hotel Administration
- 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: Biological Sciences
- Graduate School: Humanities
- Graduate School: Physical Sciences
- Graduate School: Social Sciences
- Law School
- 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.)