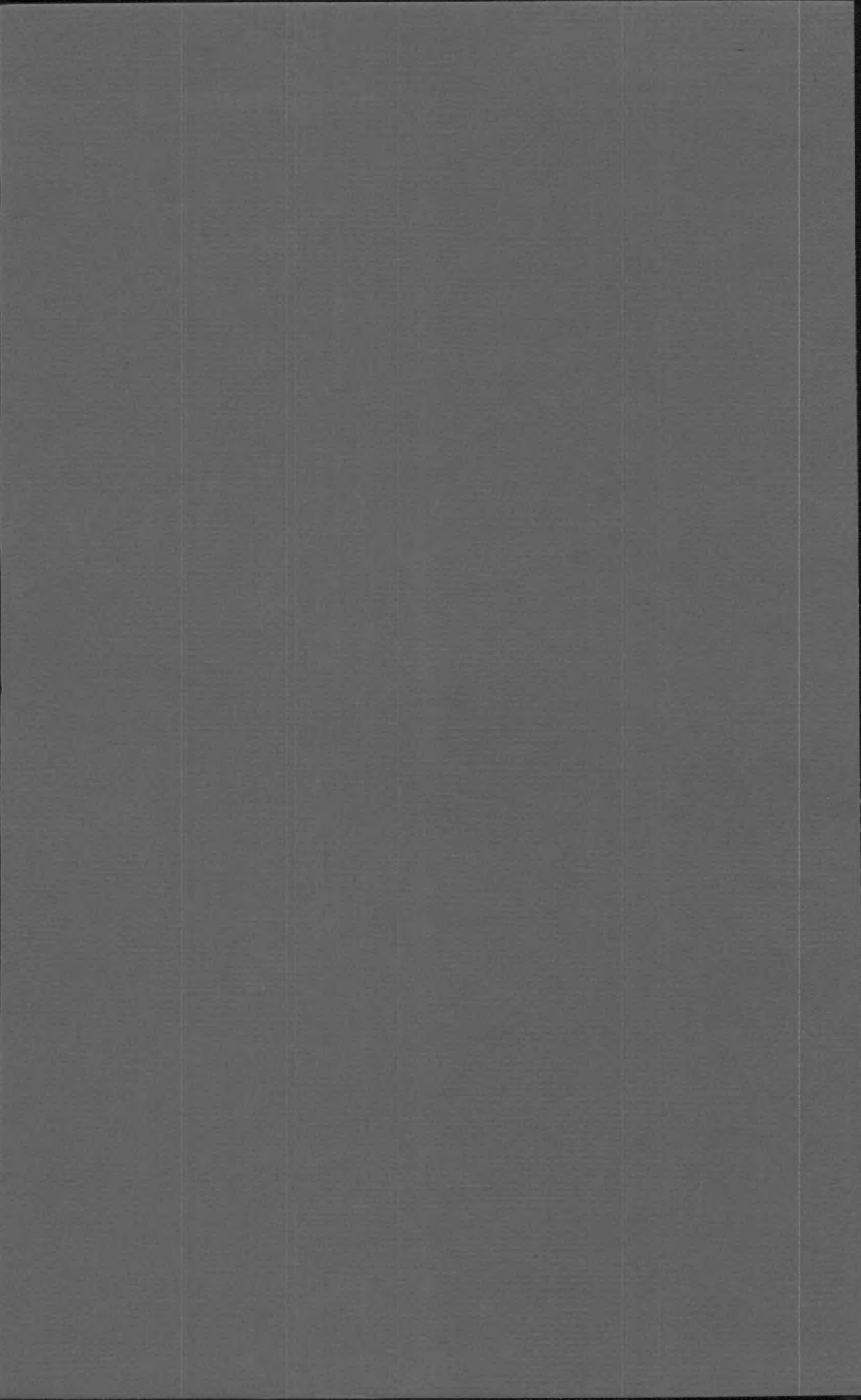


Cornell University  
Announcements  
College of  
Architecture,  
Art, and Planning  
1971-72



# Cornell University

## College of Architecture, Art, and Planning

1971-72

### **Cornell University Announcements**

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# Cornell Academic Calendar

1971-72

Registration, new students	Thursday, September 2
Registration, continuing and rejoining students	Friday, September 3
Fall term instruction begins, 7:30 a.m.	Monday, September 6
Thanksgiving recess:	
Instruction suspended, 1:10 p.m.	Wednesday, November 24
Instruction resumed, 7:30 a.m.	Monday, November 29
Fall term instruction ends, 1:10 p.m.	Saturday, December 11
Independent study period begins, 2:00 p.m.	Saturday, December 11
Final examinations begin	Thursday, December 16
Final examinations end	Thursday, December 23
Christmas recess and intersession	
Registration, new and rejoining students	Thursday, January 20
Registration, continuing students	Friday, January 21
Spring term instruction begins, 7:30 a.m.	Monday, January 24
Spring recess:	
Instruction suspended, 1:10 p.m.	Saturday, March 18
Instruction resumed, 7:30 a.m.	Monday, March 27
Spring term instruction ends, 1:10 p.m.	Saturday, May 6
Independent study period begins, 2:00 p.m.	Saturday, May 6
Final examinations begin	Monday, May 15
Final examinations end	Monday, May 22
Commencement Day	Friday, May 26

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



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



# Cornell University

## College of Architecture, Art, and Planning

At Cornell, from the first, there was a place in the University system for the teaching of architecture. In October 1871, three years after the University opened, a School of Architecture was established and Charles Babcock, an associate of Richard Upjohn, was appointed professor of architecture. The School was fortunate to have the president of the University, Andrew Dickson White, 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 School 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 school 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, the name of the College was changed to the College of Architecture, Art, and Planning. In 1971 the Department of City and Regional Planning was divided to form a Department of Urban Planning and Development and a Department of Policy Planning and Regional Analysis.

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

The faculty of the College, acting as a division of the Graduate School, has jurisdiction over the advanced professional degrees Master of Architecture, Master of Regional Planning, and Master of Fine Arts. The College also offers programs in the following fields leading to 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.

Early in its development the College set a limit to the number of its students and devised a selective method of admission. It now enrolls about 500 students and has a full-time teaching staff of about sixty, supplemented by visiting teachers, part-time lecturers, and assistants. Teachers and students in such proportion mix together freely, and instruction and criticism are on an individual basis.

The College's courses are parts of professional curricula with fundamental subjects given within the College by men reflecting professional points of view. This professional concentration of courses within the College is balanced by the

breadth of view gained from courses and informal learning in the rest of the University. The College is convinced that this breadth is an essential element of professional education. This conviction is acted on in the form of the curriculum, the methods of teaching, and the extra-curricular life of teachers and students.

## Architecture

### Undergraduate Program

The field of architecture becomes increasingly complex as architects assume a wider range of responsibility toward problems of the built environment. In his profession, the architect has the opportunity to make contributions to the major human efforts of our time towards improving the habitat of man. These efforts will benefit from the particular vision and innovative ability of the architect. He will, however, not be the exclusive designer of the environment, but will perform his task within a total framework and in close relationship to other professions. With the changes taking place in world society, the architectural profession in the future will be very different from today. This is not to say that architecture will abandon its traditional functions but that new factors will affect the profession—the emergence of regional ecology, the application of the social sciences, the shift from the construction of buildings to the whole building process, the evolution of design methodology, the revival of large-scale design and the emergence of new roles for the design profession. In general, architects are less and less called upon to design for individuals and must now see the client as society at large. Thus, architectural education must assess what the total environment asks of the architect.

While the larger environmental problems are the concern of a number of disciplines, architecture as a profession may be more narrowly defined in terms of those services it performs which characterize its distinct role in giving concrete three-dimensional form to the physical environment. The nature of the field calls for an undergraduate education which establishes a broad understanding of human values and social problems, as

well as the theoretical and technical base of professional competence. In meeting these objectives, the undergraduate professional program structures the exploration of a wide range of architectural issues and scales of involvement, and provides the opportunity to develop particular emphasis which may become a basis for specialized studies at the graduate level.

### Professional Degree Program

The professional program leading to the Bachelor of Architecture degree is five years in length. It is particularly designed for those who have identified before matriculation their interest and motivation to enter the field. It therefore incorporates both a general and professional educational base.

The program is strongly oriented towards developing the student's ability to deal creatively with architectural problems on analytical, conceptual, and developmental levels. The sequence courses in design, consisting of studio work augmented by lectures and seminars dealing with theory and method, are the core of the program. Sequences of studies in human behavior, environmental science, structures, and building technology provide a base for the work in design.

In the first two years the student has the opportunity to establish a base in the humanities and sciences through electives. During the fourth and fifth years, this base may be extended and applied by further studies in these areas. Within the professional program, the basis is established for understanding architecture in its contemporary and historical cultural context.

The structure of the program incorporates considerable flexibility for the individual student to pursue his particular interest in the fourth and fifth years. By planning options and electives in the fifth year, it is possible for a qualified student to apply the last year of work towards the Bachelor of Architecture degree to one of the graduate programs offered in the College, with the possibility of completing the requirements for the Master's degree in one additional year.

### Nonprofessional Program Options

The first two years of the professional program are considered a basic introduc-

tion to the field. It is possible after this phase to depart from the professional program to develop a concentration in some area of the broader field without the intention of becoming a qualified practicing architect. Programs developing major concentrations in the third and fourth years leading to the nonprofessional Bachelor of Fine Arts degree after the fourth year are currently under development and will be in effect in the coming years. A student attaining the B.F.A. degree could either terminate his studies or apply for a graduate program in the area of his concentration.

### Transfer Students

While the program is specifically directed to those who are strongly motivated to begin a professional program when entering college, it is sufficiently flexible to allow admission of students who do not make this determination until after a year or even two years of college work. Each transfer case is considered individually. Transfer students are usually able to complete requirements for the B. Arch. degree in less than five years by attending summer sessions.

### Bachelor of Architecture Curriculum

#### First Year

<i>Fall Term</i>	<i>Credit Hours</i>
Design I 101	4
Introduction to Architecture 301	2
Visual Communication I 501	2
History of Architecture 401	3
Elective (Out of College) or Fine Arts Option <sup>1</sup>	3
Elective (Out of College)	3
	—
	17

#### Spring Term

Design II 102	4
Introduction to Architecture 302	2
Visual Communication II 502	2
History of Architecture II 402	3
Elective (Out of College) or Fine Arts Option <sup>1</sup>	3
Elective (Out of College)	3
	—
	17

#### Second Year

##### Fall Term

Design III 103	4
Architectural Elements and Principles 303	2
Mathematical Techniques 203	2
Introduction to Environmental Science 703	3
Option (Visual Communication 503 or Fine Arts) <sup>2</sup>	3
Elective (Out of College)	3
	—
	17

##### Spring Term

Design IV 104	4
Architectural Elements and Principles 304	2
Structural Concepts 204	3
Introduction to Human Ecology 704	2
Option (Visual Communication 504 or Fine Arts) <sup>2</sup>	3
Elective (Out of College)	3
	—
	17

<sup>2</sup> One course in visual communication and one course in fine arts are to be taken during the second year.

After completion of the first two years, a student may elect to deviate from the professional program by substituting for indicated courses (\*) others leading to a concentration in history of architecture or other areas within the general field of architecture and, upon meeting the concentration requirements receive a B.F.A. degree after the fourth year.

#### Third Year

<i>Fall Term</i>	<i>Credit Hours</i>
Design V 105*	6
Building Technology, Materials, and Methods 605*	3
Structural Systems I 205*	3
Option (100 or 300 series)	2
Computer Applications (Arch. 323) or Elective (In College)	3
	—
	17

##### Spring Term

Design VI 106*	6
Environmental Controls I 706*	2
Structural Systems II 206*	3
Option (100 or 300 series or Arch. 606)	2
Elective (In or Out of College)	4
	—
	17

<sup>1</sup> One course in fine arts must be taken during the first year.

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### Fourth Year

#### Fall Term

Design VII 107*	6
Environmental Controls II 707*	2
Option (City-Regional Planning* or Architectural Science/Technology*)	3
Elective (In Department)	2
Elective (In or Out of College)	4
	17

#### Spring Term

Design VIII 108*	6
Technological Integration in Design 608*	2
The Practice of Architecture 808*	2
Elective (In or Out of College)	3
Elective (Out of College)	4
Program Planning for Fifth Year (Required)*	0
	17

Students in Design 107 and 108 elect a studio option in architectural design, urban design, or architectural technology/environmental science each term of the fourth year. The student is expected to take recommended elective courses which relate to the studio concentration.

### Fifth Year

#### Fall Term

Architectural Studio 109, Thesis 111, or Special Program	8
Advanced Seminar in Architecture 309	2
Elective (In or Out of College)	3
Elective (Out of College)	4
	17

#### Spring Term

Architectural Studio 110, Thesis 111, or Special Program	8
Advanced Seminar in Architecture 310	2
Elective (In or Out of College)	3
Elective (Out of College)	4
	17
Total	170

### Distribution Requirements

In order to fulfill the College distribution requirement, a student must take two courses in architectural history in addition to Architecture 401 and 402, one course in city and regional planning, and two courses in fine arts.

Each student must also fulfill the out-of-College distribution requirement with one course from each of the following areas: (1) social or behavioral sciences; (2) humanities; and (3) math, physical or biological sciences.

## Graduate Programs

The programs under which graduate study in the Department of Architecture may be pursued are architectural design, urban design, and regional design leading to a Master of Architecture (M.Arch.) degree; architectural science leading to a Master of Science degree; architectural history and history of urban development leading to a Master of Arts degree; and a joint program between urban design-regional design and planning and urban development leading to both the Master of Architecture and the Master of Regional Planning degrees.

### Design

Students who have satisfactorily completed an undergraduate course in architecture or its equivalent at an approved institution may be admitted as candidates for the degree of Master of Architecture. Three areas of major concentration are offered: architectural design, urban design, and regional design. These areas are each sufficiently broad to verge on one another while focusing in general on the scale of problems suggested by the designation. It is assumed that each student will develop his elective program to reinforce and supplement the studio work. A minimum of sixty credit hours is required. Of these, thirty-six are in design studio work, between nine and twelve in a minor concentration within or outside the Department of Architecture, and the remainder in general course work of which at least six credit hours must be taken outside the Department of Architecture and, preferably, outside the College. Students majoring in urban design or regional design are required to take a minimum of nine credit hours in Urban Planning and Development or Policy Planning and Regional Analysis courses.

Normally four terms of study are required, and the student should not anticipate completing his studies in less than this time, although in special cases the



requirements may be completed within three-semester residence.

The programs leading to the Master of Architecture degree are administered by Program Concentration Committees consisting of the Field representative and those faculty offering work in the area of concentration. Each graduate student selects a Special Committee which advises him and administers his program. The Special Committee includes two advisers in the area of major concentration and one adviser in the area of minor concentration. The thesis is directed by the Special Committee with an additional member at the student's option.

First-year graduate students normally elect the studio in their area of major concentration. Special projects organized by the faculty may be offered and elected as an alternative to participation in one of the studios with the permission of the instructor and the Program Concentration Committee. Second-year studio work is normally devoted to the thesis. However, the student may elect, with permission of the Program Committee, to devote only the fourth term to the thesis.

### Architectural Science

Qualified students enrolled in the Graduate School in programs leading to the degree of Master of Science may elect architectural science as either a major or a minor subject; those enrolled in programs leading to the degree of Doctor of Philosophy may elect it as a minor subject.

Students with undergraduate degrees in architecture, architectural engineering, or the various branches of engineering, or behavioral science, 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.

The objectives of the graduate program in architectural science follow.

1. To afford an opportunity for students of architecture to expand their creative design potential by increasing their knowledge and understanding of environmental science and building technologies.

2. To provide a framework within which students who have graduated in related technical disciplines can explore

building science and technology related specifically to architecture. This training prepares students with such backgrounds to join the ranks of consultants well versed in the architectural implications of contemporary science.

3. To provide a framework within which the student can explore the application of these disciplines in an architectural context.

A candidate 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 as they relate to his needs and interests. A portion of the student's program will consist of formal course work. In addition to the courses offered by the College of Architecture, Art, and Planning, a student may select courses offered elsewhere in the University, such as courses in civil engineering, engineering mechanics, mechanical engineering, electrical engineering, physics, computer science, housing and environmental analysis, mathematics, etc.

Facilities include a well-equipped structural model laboratory and immediate access to the Cornell computing center (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 spe-

cial 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.

### 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 six to eight weeks duration.

At the undergraduate level the time is devoted exclusively to one subject, architectural design. 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 or may be allocated to elective credit hours.

Registration will be limited to students of satisfactory standing who have completed the sophomore year of study. In exceptional cases a student who has completed only one year of study may be allowed to register. 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 Special Committee.

## Art

### Undergraduate Program

The undergraduate curriculum in art, 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

<i>Fall Term</i>	<i>Credit Hours</i>
Color, Form, and Space 309	4
Introductory Drawing 341	3
Introductory Painting 301	3
and/or	
Introductory Sculpture 331	3
Electives	6
	<hr/>
	16

#### Spring Term

Introductory Drawing 342	3
Introductory Painting 302	3
and/or	
Introductory Sculpture 332	3
Electives	10
	<hr/>
	16

#### Second Year

##### Fall Term

Second-Year Drawing 343	3
Printmaking 322 or 321	3
Second-Year Painting 303	3
and/or	
Second-Year Sculpture 333	3
Electives	7
	<hr/>
	16

##### Spring Term

Second-Year Drawing 344	3
Second-Year Painting 304	3
and/or	
Second-Year Sculpture 334	3
and/or	
Printmaking 322 or 321	3
Electives	10
	<hr/>
	16

#### Third and Fourth Year

In the last two years the student should design his program so that he completes the fourth-year level in painting or sculpture or graphics or so that he achieves the completion of the third-year level in two of those three areas. Twelve additional credits in art history at the 200 level or higher or in architectural history must be completed in the last two years. The student is expected to take thirty-two credit hours in his third year and thirty-two credit hours in his fourth year.

The B.F.A. program is designed so that a student may fulfill the degree requirement of 128 credit hours with a minimum of 52 credits that must be taken in the Department of Art and a minimum of 52 credits that must be taken outside of the Department. Within these ranges, a student may design his own program subject to the following limitations:

1. Of the minimum of 52 elective credit hours to be taken outside of the Department of Art, four courses must be in English, History, or other humanities offered in the College of Arts and Sciences. This distributional requirement must be completed in the first two years. Six credits in art history at the 200 level or higher or in architectural history must also be completed in the first two years. Twelve additional credits in art history at the 200 level or higher or in architectural history must be completed in the last two years.
2. Of the minimum of 52 credit hours to be taken within the Department of Art, the following courses must be completed in the first two years: Art 309, 341, 342, 343, 344, 301, 302, 331, 332, and Art 321 or 322.

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

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

#### Graduate Study

A student who holds a Bachelor's degree or its equivalent and has clearly demon-

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strated professional promise in the field of art may be admitted as a candidate 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 may enroll in 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.

## Planning

Planning seeks to guide the development of the environment in order that man's needs and aspirations may be better satisfied. Urban planning is concerned primarily with the urban environment, the social and economic forces that affect this environment, and the processes of plan making and administration. Regional analysis 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. Policy planning is concerned with the social decision processes involved in both city and regional planning. The programs of study in this field, primarily at the graduate level, have two major objectives: (1) professional education for participation in planning the physical, economic, and social development of urban areas and regions; and (2) more advanced specialized education for those who seek careers in teaching and research, as well as policy-making positions.

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 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 as well as in the College of Architecture, Art, and Planning. 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 departments and individuals to focus their interests in these areas. Graduate programs in the Graduate School of Business and Public Administration, the School of Civil Engineering, the School of Industrial Engineering and Operations Research in the College of Engineering, the Law School, and the Department of Architecture offer opportunities for combined programs of study.

In addition to the specialized urban 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. The City Planning Archives, in the Department of Regional History and University Archives in Olin Library, containing the papers and records of many pioneering individuals and organizations in the profession, provides a unique research resource.

### Master of Regional Planning

Graduate study for the Master of Regional Planning degree is administered by the College under the jurisdiction of the Graduate School operating through each of the two departments which offer the M.R.P. degree. The standard requirements of the Graduate School for the selection of major and minor subjects do not apply to planning students. Instead, prospective students are subject to the specific requirements of their department. These requirements are listed in the departmental descriptions on pp. 14-17.

The Department of Policy Planning and Regional Analysis and the Department of Urban Planning and Development are the two departments within the College that offer programs leading to the M.R.P. degree. Each department has clearly defined educational goals which, while related, are aimed at providing training for significantly different areas of planning activity. Before applying for admission in planning, a prospective student should review carefully the descriptions and courses for each department and

apply to the one that most closely satisfies his interests. Specific questions about the M.R.P. programs may be addressed to the dean of the College or the appropriate department chairman.

### Doctor of Philosophy

Graduate study leading to the degree of Doctor of Philosophy is offered through the Field of City and Regional Planning under the jurisdiction of the faculty of the Graduate School. A Master's degree in planning with course work equivalent to that required in the first year of the graduate programs in planning at Cornell is ordinarily required for admission to candidacy for the Ph.D. degree. Applicants who hold the Master's degree in a related field and have had acceptable experience in 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* 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 re-

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search 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 information not found in this *Announcement*, write to the Field representative, Mr. Sidney Saltzman, 109 West Sibley Hall.

### The Department of Policy Planning and Regional Analysis

The Department of Policy Planning and Regional Analysis is broadly concerned with social decision-making processes: the formation of public policies, the design and evaluation of programs, the development of institutions, and the creation of legislative and administrative implementation devices. Policy planning is the attempt to analyze choices and values which underlie public policy and, given scarce resources, to help policy-makers choose between alternatives so as to reach the community's goals and objectives. Regional analysis is the study of subnational social systems at the regional, community, and group levels, and the ways in which they relate to the larger systems of which they are part. These concerns reflect a general view of planning which can be applied to a number of areas: urban physical development; health, welfare, education, manpower, housing, and recreation systems; the development of lagging regions and of regions in third world nations. This view of planning entails the use of theoretical and analytical tools developed for the study of social and economic systems and the relationships between them.

Study at the Master's level in the Department of Policy Planning and Regional Analysis prepares candidates for professional service in government agencies, citizens' groups, private businesses, consulting firms, and other organizations engaged in physical, economic, and social development planning. Study for the degree of Doctor of Philosophy offers advanced work for those interested in

research and teaching positions in graduate and undergraduate planning education and urban studies programs, and in research and policy analysis positions in government agencies and private organizations.

### Admissions

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 October, so that results will be available for review.

### Curriculum and Requirements

Graduate study for the Master of Regional Planning degree is intended to provide the basic foundation in theory and professional skills in analysis, methods, and techniques needed for practice in the field. The course of study for the M.R.P. 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 Policy Planning and Regional Analysis, follow a specialized program which may enable them, if admitted as graduate students, to earn the M.R.P. degree in two or three terms of graduate study.

Students in the first year follow a program of study designed to meet area requirements in basic concepts including: (1) planning theory, (2) urban and regional theory, (3) methods of investigation and analysis, and (4) planning institutions, which complete a foundation for specialization in the second year. The second year provides an opportunity to pursue

these subjects in greater depth, to study problem areas of application such as urban and environmental systems planning; regional economics and development planning; and social planning, health systems, and housing. Field work experience in the summer between the two years is recommended.

A minimum of sixty credit hours of course work, including a thesis, is required for the M.R.P. degree. Thirty of these credits must be in courses offered by the Department. The student is responsible for the general subjects of planning theory, urban and regional theory, methods of analysis, and planning institutions represented by the first-year divisions of the course list, and must attain minimal competence in each as determined by the student and his adviser. In addition, candidates for the M.R.P. degree must complete a satisfactory thesis with six to ten credit hours as determined by the student and the chairman of his Special Committee. The thesis normally entails specialization in course offerings during the latter part of the program, and students are encouraged to choose an adviser relevant to such specialization early in the program of study.

For further information not found in this *Announcement*, write to the Field Representative, City and Regional Planning, 109 West Sibley Hall.

## The Department of Urban Planning and Development

The basic goal of the Department of Urban Planning and Development is to provide graduate-level professional training essential for persons seeking careers in urban planning, renewal, and development programs with public agencies primarily at the municipal, metropolitan, county, regional and state levels; with private consultants serving public agencies or private clients; with citizens' groups which require planning services; and with private concerns engaged in development activities.

The major focus of the Department's teaching, research, and community service programs is on the applied aspects of urban planning and development activities. The Department's program is concerned, to a great extent, with the determinants of land use and arrangement of

space within cities and regions—its planning, development, control, and management. Considerable attention is given to economic, social, and political matters particularly as they affect the urban physical environment.

Methodological skills appropriate to finding solutions for urban problems of this kind shall be considered an integral part of the program. Applied social services programs, as they relate to broader planning and development programs, are considered an important input to the Department's interests, as are matters of improving the quality of the physical environment. Emphasis is on the urban aspects of these programs, generally at the scale of neighborhood, city, or metropolitan region. The educational approach of the Department is primarily prescriptive, involving case studies and field work, as well as academic courses. These necessarily draw upon a base of urban and planning theory.

The major areas of current interest reflected in the Department's curriculum include the following:

- Historical development of urban areas; history of planning for cities; preservation of historic areas

- The urban planning process; information gathering and processing; techniques of analysis; planning, administration, and organization; social, political, and governmental structure
- Implementation of urban plans and development programs; land acquisition techniques; land-use controls; municipal finances; social organization and action; governmental policies and legislation for urban planning and development

- Design of urban and regional space; urban aesthetics; ecological influences on land development; environmental psychology

- Comprehensive and functional area planning; land-use planning; open space programs and planning; housing and urban renewal policies, plans, and programs; institutional and community facilities planning; transportation and communication influences on urban development; planning and developing new towns

- Urban planning practice; planning with specific client groups; governmental



agency planning; advocacy planning; field work experience

For the guidance of prospective students, it should be emphasized that the program of studies offered by the Department concentrates primarily on those aspects of planning dealing with improving the urban environment and with the action programs necessary to achieve that goal. Students interested primarily in planning for social services with no direct interest in planning for the physical environment should address their inquiries to other departments which focus on such subjects. Those concerned mainly with social and economic policies for development, quantitative methods in urban studies, urban theory, or planning theory should apply to the Department of Policy Planning and Regional Analysis. Those concerned mainly with three-dimensional urban design should apply to the Department of Architecture.

### Admission

Students from all undergraduate disciplines are encouraged to apply for admission to the Department. Applicants are expected to hold a Bachelor's degree from a recognized institution.

Beginning graduate students can apply to the Master's program or to the doctoral program as candidates for the Master's degree. Application for transfer to the doctoral program can be made 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.

Graduate students in architecture, urban design, or law may earn degrees in one of these fields and planning in a shorter period than normally required for both degrees by following approved joint degree programs. Students interested in this possibility should consult advisers in both departments or schools concerned.

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 October, so that results will be available for review.

For further information about application and admission requirements not

found in this *Announcement*, write to the Chairman, Department of Urban Planning and Development, 106 West Sibley Hall.

### Curriculum and Requirements

The curriculum has been designed to provide the student with the opportunity to gain knowledge across a breadth of disciplines while at the same time permitting him to concentrate and study in depth in one or more areas of activity within the field. A small number of foundation courses is required to be taken very early in the program. These are designed to present a comprehensive view of the field and the opportunities for study within the Department. Following this, the student is permitted to develop his own program of study, with the guidance of a faculty member, so that he can build knowledge and skills in at least one area within the field while continuing to broaden his understanding of urban planning through selection of a wide range of courses drawn from many disciplines. Throughout the program, attention is given to the development of close working relationships between students and individual faculty members.

A minimum total of sixty credit hours of course work is required for the M.R.P. degree in the Department of Urban Planning and Development. At least thirty of these credits must be taken in courses offered within the Department. Ordinarily, two years of course work are necessary to complete the requirements for the degree. A minimum of one academic year of residence is required.

The curriculum is subdivided into the following requirements:

	Credit Hours
Four specified foundation courses	16
Courses elected by the student	
in one area of concentration	10
Integrative workshop	6
Thesis, special approved project, or research paper	6
Electives	22
Total	60

The foundation courses include the following:

UPD 510	Introduction to Concepts and Principles of Urban Planning and Development
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- PPRA 510 Introduction to Urban and Regional Theory
- UPD 520 Introduction to Quantitative Techniques in Urban Planning I
- UPD 540 Introduction to Environmental Planning and Design

Students entering the Department with prior course work in some of the subject matter areas covered in these foundation courses will be permitted to waive all or part of the requirement for such a course, or substitute an advanced course. Waiver of a required course shall not constitute waiver of the required credit hours.

To fulfill the concentration requirement, the student must take a minimum of ten credit hours in one area. The areas of concentration, in general, are based on subjects where the faculty has special competence. For each area the Department will provide the student with a listing of courses, within and outside of the Department, from which selections can be made. With the consent of his adviser, the student may take other courses of special interest not listed, but related to the concentration.

The intent of the concentration requirement is to enable the student to begin to build special competence in at least one area within the profession. The courses are to be selected with the advice of a faculty member whose interests are closely related to the specialty area. A partial list of areas of concentration follows:

Urban history and preservation of historic areas

The urban planning process

Planning implementation

Planning design

Comprehensive and functional area planning (housing and renewal, land-use planning, new town development, institutional and community facilities planning)

Neighborhood and community development planning and program implementation

The integrative workshop, UPD 670, ordinarily will be taken in the student's second year in the program. Students will have the opportunity to work together as a group sharing knowledge, ideas, and backgrounds within a setting that is close to an actual professional experience. This

workshop, together with a summer internship or other job experience, is aimed at providing an opportunity to apply, in real situations, the skills gained from other courses in the Department.

The Department requires that a Master's thesis (six credit hours) be completed for the degree. In special circumstances, upon the petition by the student to the faculty of the Department, a special project or research paper may be substituted for the thesis.

Electives may be taken in any area or in any department or program of the University. The selection of the electives should be made with the guidance of the student's adviser. The Department generally attempts to identify relevant courses available outside the Department and to provide an up-to-date listing of such courses to all students.

## General Admissions

### Undergraduate

The University 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 principle. 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. It is the policy of Cornell University that no student shall be denied admission or be otherwise discriminated against because of race, color, creed, religion, or national origin.

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 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.

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A maximum of one hundred 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 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 from his school, 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.

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

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 *Department of Architecture* must present sixteen units including four units of English, four units of mathematics, and three units of foreign language (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 professional in its objectives. 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.

Candidates for admission to the *Department of Art* must present sixteen units





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including four units of English, two units of college-preparatory mathematics, and three units of foreign language (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.

### 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.

### Graduate

Graduate programs in the College of Architecture, Art, and Planning are of two general types, requiring different admissions procedures. First, professional programs leading to the degrees of Master of Architecture, Master of Fine Arts, and Master of Regional Planning are formally under the jurisdiction of the Division of Architecture, Art, and Planning 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 first review the specific requirements for each department as listed in the departmental descriptions contained in this catalog and write to the appropriate department chairman.

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 *Announcement of the Graduate School*.

Graduate applications 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.

## Special Students

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 Admission, 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.

## Financial Aid

### 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 Col-

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lege, the late Albert D. Gillespie, and are granted on the basis of general academic performance and need.

### **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 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.

## **Medals and Prizes**

### **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 Student Medal of the American Institute of Architects**

is awarded to the member of the graduating class in architecture who has maintained the best academic grade average throughout the entire course.

### **The Baird Prizes**

consist of one or more prizes in the total amount of \$100 in a special problem competition in second-year design. The fund established in 1927 was the gift of Mrs. M. Z. Baird.

### **The Clifton Beckwith Brown Memorial Medal**

was established in 1901 by John Harkness Brown in the memory of his brother, Clifton Beckwith Brown '00, 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 courses 107, 108, 109, and 110. The award is withheld if the standard is considerably higher than that required for graduation.

### **The Paul Dickinson Prize,**

established in 1927 by Mrs. George A. Shedden '23 in memory of her father, is a \$50 prize awarded to the student in the first-year undergraduate class of the College who has attained the highest scholastic record. This prize is not awarded unless the record is well above the average of the first-year work in the College.

**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 Eschweiler Prize** 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 awarded to a student in architecture with high scholastic achievement who has been accepted to one of the architecture graduate programs at the end of his fifth year.

**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 Charles Goodwin Sands Memorial Medal**, founded in 1900 by the family of Charles Goodwin Sands '90, 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 painting and sculpture are eligible for medal consideration.

**The Edwin A. Seipp Memorial Prizes**, one or more prizes in the total amount of \$150.00, were established in 1948 by Mrs. E. A. Seipp in memory of her husband, an alumnus of the Class of 1905. They are awarded in a special competition in third-year design.

**The Edward Palmer York Memorial Prizes** is one or more prizes in the total amount of \$100 which shall be awarded in a special competition for students in introductory design. Traditionally, 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 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.

**The Edith and Walter King Stone Memorial Prizes** are awarded to juniors at the end of their third year. Two awards of \$250 each are given on the basis of promise and accomplishment in the field of art.

**The American Institute of Planners Student Award** is presented to a candidate for the professional degree in planning (M.R.P.) in recognition of outstanding ability. 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., 1955, M.R.P., 1957.

**The Mackesey Prize**, in honor of former dean of the College of Architecture, 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 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 prizes are cash awards totaling \$400.

### Traveling Fellowships

**The John W. Root Traveling Scholarship** is an annual award of \$1,500, open to any



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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 supplement 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.

### Graduate Fellowships

*The Announcement of the Graduate School* 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 Kellogg Scholarships and the Eidlitz Fellowships, described earlier in reference to undergraduates, are also available to graduate students in architecture.

Twenty-one 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.

The Department of Urban Planning and Development and the Department of Policy Planning and Regional Analysis also award a number of research assistantships in city planning and urban renewal for study in the M.R.P. program, and several three-year traineeships are supported by the United States Public Health Service.

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.

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.

### Loans

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

## General Information

### Expenses

Living costs depend to a great extent upon the individual's standard of living. Recent estimates indicate that undergraduate students spend approximately \$1,500 a year for room and board. Laundry and cleaning, books, instruments, and other supplies will cost about \$700 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 tuition and the General Fee, as well as details concerning payment. Graduate Students should refer to the *Announcement of the Graduate School* for this information.

### 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 Cor-

nell 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.

## 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.

## 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*.

## 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.

Information on the summer term in architecture is given on p. 10.

## Facilities

### Buildings

The College occupies Sibley Hall, Franklin Hall, and the Foundry. 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. The Green Dragon, a student lounge, is located in the basement of Sibley Hall.

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 61,000 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.

The new Herbert F. Johnson Museum, designed by I. M. Pei and Partners, is expected to open late in 1972 or early in 1973.

### Housing

Cornell University provides residence halls on the campus for approximately 5,200 students. Meals may be taken where desired. Freshmen are required to live in University residence halls; upperclassmen are not, but are individually responsible for making their own living 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 Services, 223 Day Hall, Cornell University, Ithaca, New York 14850.

### 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 Housing Services Office, 223 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. For more detailed information, address inquiries to the Married Student Housing Office, Building 40, Hasbrouck Apartments, Pleasant Grove Road, Ithaca, New York 14850.

### Off-Campus Housing

Off-Campus Housing 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 on a board in the Housing Services Office, 223 Day Hall.

### Health Services and Medical Care

The health services for students are centered in two Cornell facilities: the Gannett Medical Clinic (outpatient 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 undergraduate 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.

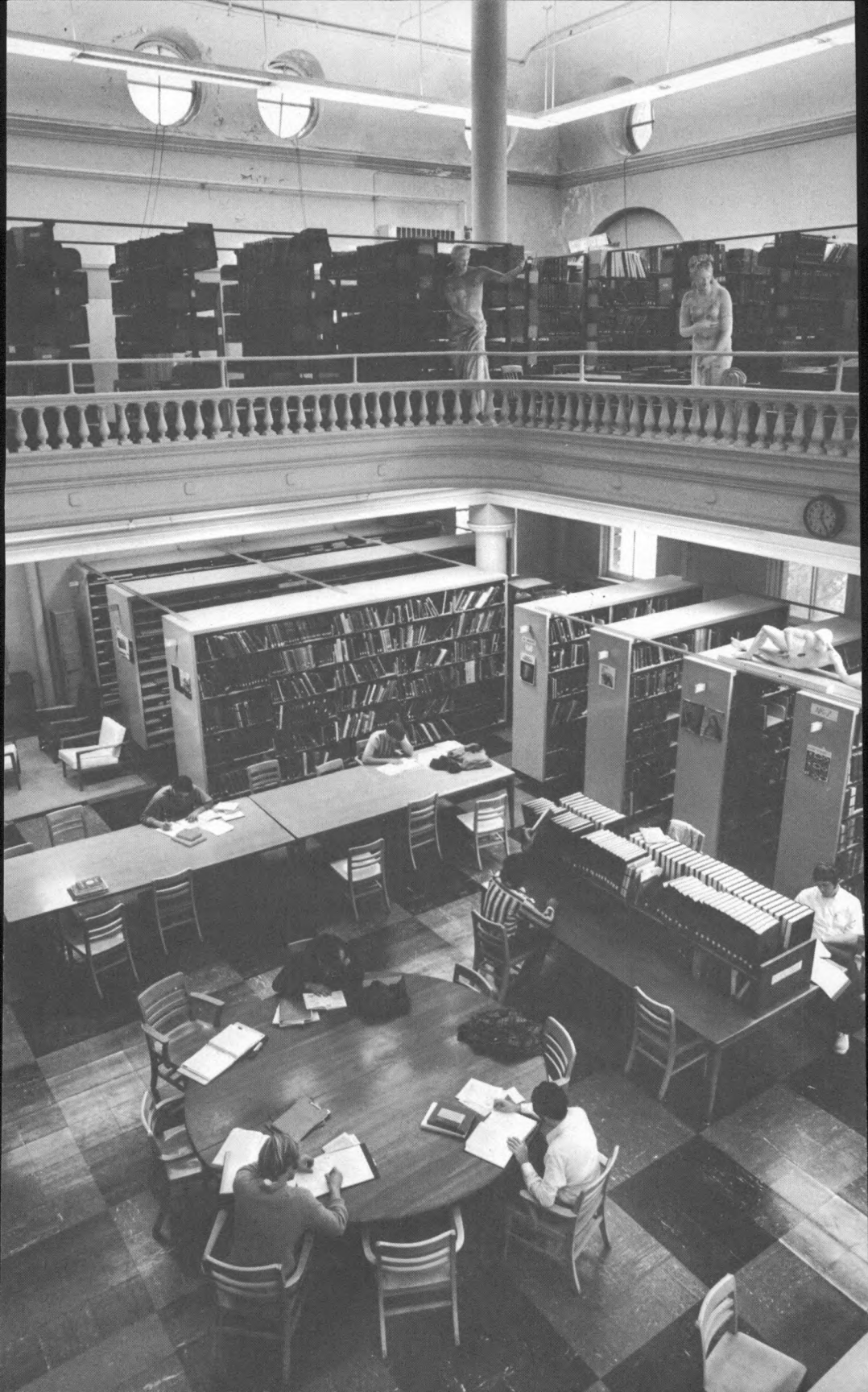
### Foreign Students

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, Barnes Hall, Cornell University, Ithaca, New York 14850.

### University Privileges

The student of the College of Architecture, Art, and Planning is entitled to the use of all of 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.



# 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.

## Architecture

Faculty: Mr. Ungers, Chairman; Messrs. Canfield, Chimacoff, Cohen, Crump, Dennis, Greenberg, Heerwagen, Herdeg, Jacobs, B. W. Jones, Kelly (on leave), Kira, Koetter, Lesnikowski, Mackenzie, Messick, Otto, Pearson, Richardson, Rowe, Saul, Seligmann, Shaw, Sherwood, Simons, J. A. Wells.

## Architectural Design

### Sequence Courses

**101-102 Design I and II.** Studio and seminar. Throughout the year. Credit four hours a term. Must be accompanied by Architecture 301-302.

**103-104 Design III and IV.** Studio and seminar. Throughout the year. Credit four hours a term. Must be accompanied by Architecture 303-304.

**105-106 Design V and VI.** Studio and seminar. Throughout the year. Credit six hours a term.

**107-108 Design VII and VIII.** Studio option and seminar. Throughout the year. Credit six hours a term.

The studio options are offered in architectural design, urban design, or architectural technology/environmental science each term.

**109-110 Design IX and X.** Studio. Throughout the year. Credit eight hours a term. Advanced design studio.

**111 Thesis/Research.** Throughout the year. Credit sixteen hours. Thesis to be prearranged with the advisers during the fourth year.

**112 Special Program.** Throughout the year. Credit sixteen hours. To be arranged with faculty during the fourth year. Intended primarily for students applying to a graduate program in the College.

### Nonsequence Courses

**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.

**121-122 Elective Design Studio.** Either term. Credit as assigned. Registration restricted to out-of-Department students. Permission of the instructor required. To be coordinated by Architecture Department Office. Must be accompanied by Arch. 301 or 302.

**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, 121-122 and 123 may not be used to fulfill degree requirements in architectural design except by approval of the Department faculty.

**130 Special Problems in Architectural Design.** Either term. Registration and credit by arrangement. Elective. Staff.

**132 Seminar: Twentieth Century Housing—A Comparative Analysis.** Spring term. Credit two hours. Prerequisite: Architecture 106 and permission of the instructor. Not open to out-of-Department students. Mr. Sherwood.

**134 Seminar: Urban Housing Developments.** Spring term. Credit two hours. Limited to fourth- and fifth-year students in architecture and graduate students. Prerequisite: permission of the instructor. Mr. Ungers.

The seminar concentrates on large-scale housing developments, particularly in relation to size, density, and problems of infrastructure.

## 30 Courses—Architecture

**136 Seminar: Outer City Development.** Spring term. Credit two hours. Open to third-, fourth-, and fifth-year students in architecture and graduate students. Prerequisite: permission of the instructors. Messrs. Pearman and Shaw.

Environmental design issues in development of areas peripheral to and between central cities; a survey and analysis of alternative spatial models for structuring 'outer city' development.

**137/138 Seminar on the Architectural Design Process.** Either term. Credit two hours. Open to undergraduate students. Prerequisite: permission of the instructor. Miss Hermanuz. The architectural design process as it relates to the cultural and social environment.

**142 Transportation.** Seminar. Spring term. Credit two hours. Prerequisite: permission of the instructor. Messrs. Cohen and Meyburg. A seminar concerning the impact of various transportation forms upon the urban environment—involving architects, engineers, planners and human ecologists. Readings and discussions including historical, current, and future transportation modes will focus on the aesthetic and physical aspects.

### Graduate Courses

**171-172 Problems in Architectural Design.** Studio and seminar. Throughout the year. Credit nine hours each term. The basic first-year design course for graduate students whose major concentration is architectural design.

**173 Thesis or Research in Architectural Design.** Throughout the year. Credit eighteen hours. Second-year design course for graduate students whose major concentration is architectural design.

**181-182 Problems in Urban Design.** Studio and seminar. Throughout the year. Credit nine hours each term. The basic first-year design course for graduate students whose major concentration is urban design.

**183 Thesis or Research in Urban Design.** Throughout the year. Credit eighteen hours. Second-year design course for graduate students whose major concentration is urban design.

**191-192 Problems in Regional Design.** Studio and seminar. Throughout the year. Credit nine hours each term. The basic first-year design course for graduate students whose major concentration is regional design.

**193 Thesis or Research in Regional Design.** Throughout the year. Credit eighteen hours. Second-year design course for graduate stu-

dents whose major concentration is regional design.

## Structures

### Sequence Courses

**203 Mathematical Techniques.** Fall term. Credit two hours. Mr. B. W. Jones. Introduction to mathematical concepts and operations utilized in architecture.

**204 Structural Concepts.** Lecture and lab. Spring term. Credit three hours. Mr. Greenberg. Fundamental concepts of structural behavior.

**205 Structural Systems I.** Fall term. Credit three hours. Prerequisite: Architecture 203-204.

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

**206 Structural Systems II.** Spring term. Credit three hours. Prerequisite: Architecture 203-204.

Structural design concepts and procedures for reinforced concrete building construction.

### Nonsequence Courses

**221 Advanced Steel Building Design.** Fall term. Credit three hours. Prerequisite: Architecture 204 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, composite steel beam and concrete slab construction, steel space frames.

**223 Surface Structures.** Spring term. Credit three hours. Permission of the instructor required. Mr. Greenberg.

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.

**224 Advanced Reinforced Concrete Building Systems.** Spring term. Credit three hours. Prerequisite: Architecture 206 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.

**226 Building Substructure.** Spring term. Credit three hours. Prerequisite: Architecture 206 and permission of the instructor. Mr. Saul.

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

## Architectural Principles

### Sequence Courses

**301-302 Introduction to Architecture.** Lecture. Throughout the year. Credit two hours per term. Architecture students must register for this course with Architecture 101-102. Also open to out-of-Department students. Introduction to the field of architecture and its relation to other disciplines.

**303-304 Architectural Elements and Principles.** Lecture. Throughout the year. Credit two hours per term. Architecture students must register for this course with Architecture 103-104. Also open to out-of-Department students. Prerequisite: Architecture 301-302. Discussion of basic principles and components of architectural organization.

**309-310 Advanced Seminar in Architecture.** Throughout the year. Credit two hours per term. Required for all fifth-year architecture students. Open to graduate students.

### Nonsequence Courses

**322 Introduction to Recent Design Aids.** Spring term. Credit two hours. Open to graduate and undergraduate students by permission of the instructor. Mr. B. W. Jones. Quantitative and qualitative methods of problem solving.

**323 Computer Applications.** Fall term. Credit three hours. Enrollment limited to third-year students and above. 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.

**325-326 Theory of Architecture.** Throughout the year. Credit three hours a term. First term not prerequisite to the second. Messrs. Dennis and Herdeg.

## Architectural History

### Sequence Course

**401-402 History of Architecture I and II.** Throughout the year. Credit three hours a term. Messrs. Otto and Jacobs. The history of architecture, considered as a social and cultural expression of Western civilization. The nature and scope of the field

is considered in the fall; Renaissance to modern architecture discussed 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.

### Nonsequence Courses

**430 The Ancient Near East.** Spring term. Credit four hours. Prerequisite: Architecture 401 or permission of the instructor. Architecture of the oldest historic civilizations associated with Western tradition, with emphasis on Egypt and Mesopotamia.

**431 The Classical World.** Fall term. Credit four hours. Prerequisite: Architecture 401 or permission of the instructor. Architecture of the ancient Mediterranean civilizations, with emphasis on Greece and Rome.

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

**434 Islamic Architecture.** Spring term. Credit four hours. Prerequisite: permission of the instructor.

**435 Architecture and Planning in the Orient (UPD 602).** Fall term. Credit four hours. Prerequisite: Architecture 401 or UPD 500 or 501 or permission of the instructor. Mr. Hugo Brunt.

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

**436 The Renaissance.** Fall term. Credit four hours. Prerequisite: Architecture 401-402 or permission of the instructor. Mr. Otto. European architecture of the fifteenth and sixteenth centuries.

**437 The Baroque.** Fall term. Credit four hours. Prerequisite: Architecture 401-402 or permission of the instructor. Mr. Otto. European architecture of the seventeenth and eighteenth centuries.

**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.

**439 Modern European Architecture (History of Art 367\*).** Fall term. Credit four hours. Prerequisite: permission of the instructor.

\*Taken in the College of Arts and Sciences.



## 32 Courses—Architecture

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

**448-449 Historical Lectures in Architecture.** Throughout the year. Credit one or two hours a term. Prerequisite: permission of the instructor. Staff.

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

**451-452 Historical Seminars in Architecture.** Throughout the year. Credit two hours a term. Prerequisite: permission of the instructor. Staff.

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

**455 Special Investigations in the History of Architecture.** Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

**460-461 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.

**462 Methods of Archival Research (UPD 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.

**465 Design and Conservation (PPRA 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.

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

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

**467-468 Informal Study in the History of Architecture.** Throughout the year. Credit as assigned. Prerequisite: permission of the instructor. For graduate students.

**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. Problems in Medieval art and architecture.

**476 Seminar in Renaissance Architecture.** Spring term. Credit four hours. Prerequisite: Architecture 436 or permission of the instructor. Mr. Otto.

\*Taken in the College of Arts and Sciences.

Historical problems of European architecture of the fifteenth and sixteenth centuries.

**477 Seminar in Baroque Architecture.** Spring term. Credit four hours. Prerequisite: Architecture 439 or permission of the instructor. Mr. Otto.

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

**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.

**479 Seminar in the History of Modern Architecture.** Fall term. Credit four hours. Prerequisite: permission of the instructor. Problems in modern art and architecture.

**488 Problems in Modern Architecture.** Spring term. Credit two hours. Prerequisite: permission of the instructor. Mr. Rowe.

### Graduate Courses

**491-492 Thesis in Architectural History.** Either term. Credit as assigned. Independent study for the Master's degree.

**497-498 Dissertation in Architectural History.** Either term. Credit as assigned. Independent research by candidates for the Ph.D. degree.

## Visual Communication

### Sequence Courses

**501-502 Visual Communication I and II.** Throughout the year. Credit two hours a term. Fundamental problems of graphic representation related to the design process.

**503-504 Visual Communication III and IV.** Throughout the year. Credit three hours a term. Either term fulfills the second-year requirement.

### Nonsequence Courses

**521 Data Transformation and Graphic Representation.** Fall term. Credit three hours. Permission of the instructor required. Enrollment limited to third-year students and above. 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.

**525-526 Photography I and II.** Either term. Credit three hours. Limited to fourth- and fifth-year architecture students. Permission of the instructor required. Mr. Messick.

A black and white still photography lecture/lab course with initial emphasis on developing skills in use of the camera and in darkroom techniques.

**527-528 Advanced Photography.** Either term. Credit three hours. Limited to fourth- and fifth-year architecture students. Prerequisite: Architecture 525-526 and permission of the instructor. Mr. Messick. Independent study of more advanced work in photography, expanding from the fundamentals covered in the previous semester.

## Architectural Technology

### Sequence Courses

**605 Building Technology, Materials, and Methods.** Lecture and workshop. Fall term. Credit three hours. Prerequisite: Architecture 703 and 704.

Properties of materials, their application to the design of wood, steel and concrete structures. Evaluation of construction methods. Cost factors.

**606 Environmental Technology Workshop I.** Spring term. Credit two hours. Must be preceded or accompanied by Architecture 706. The acoustical consultants, the electrical engineer's and illumination consultant's tasks in relation to the architect's work. Acoustical and lighting design studies utilizing full-scale mockups and specific building type studies. Cost factors.

**607 Environmental Technology Workshop II.** Fall term. Credit two hours. Must be preceded or accompanied by Architecture 707. The mechanical engineer's task and its relation to the architectural design process. Mechanical equipment and its selection, potential developments. Heating and plumbing design studies of specific building types. Full-scale and model studies of the role of air movement and temperature in building design. Cost factors.

**608 Technological Integration in Design.** Lecture. Spring term. Credit two hours. Prerequisite: Architecture 704. Application of design methodology to the integration of structure, environmental control devices, and construction.

### Nonsequence Courses

**640 Environmental Control Systems.** Fall term. Credit three hours. Prerequisite: Architecture 706 and 707. 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.

**671 Industrialized Building.** Fall term. Credit three hours. Permission of the instructor required.

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.

**672 Seminar in Industrialized Building.** Spring term. Credit three hours. Prerequisite: Architecture 671 and permission of the instructor.

In-depth study of a particular topic related to those dealt with in Architecture 671.

## Architectural Science

### Sequence Courses

**703 Introduction to Environmental Science.** Fall term. Credit three hours.

The role of the architect in controlling environment. Natural influences and climatological factors. The body as an environmental control device. Theoretical aspects of behavioral science which relate to physical design.

**704 Introduction to Human Ecology.** Spring term. Credit two hours.

An examination of the form and development of the human community with respect to spatial, temporal, and functional patterns of organization. Particular attention will be paid to constructed environments as behavior settings.

**706 Environmental Controls I.** Spring term. Credit two hours. Prerequisite: Architecture 605.

Basic properties and principles of sound and light. Sound phenomena, noise control, absorption, acoustical design. Light, color, and form. Natural lighting, possibilities and constraints. Artificial lighting, good and bad examples.

**707 Environmental Controls II.** Fall term. Credit two hours. Prerequisite: Architecture 704.

Basic properties and principles of air movement and temperature. Criteria for health, comfort, efficiency. Water use and return as an ecological factor.

### Nonsequence Courses

**731-732 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.

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.

**734 Habitability: The Generation of Life Support Systems.** Seminar. Fall term. Credit two hours. Open to advanced students throughout the University, particularly those involved with architecture, psychology, sociology, the life sciences, and engineering. Prerequisite: permission of the instructor. Mr. Heerwagen. An analysis of man and his bioclimate and the synthesis of mechanistic interfaces to assist survival and provide activity support; the study of habitability as a development of physiological, psychological, and social criteria for shelter design; ultimately an attempt to formulate an architecture based on regeneration and cyclic processes.

**741/742 Special Problems in Architectural Science.** Throughout the year. Registration and credit by arrangement. Elective. Staff.

#### Graduate Courses

**771 Visual Perception and Architecture.** Fall term. Credit three hours. Open primarily to graduate students. Permission of the instructor required. Messrs. Gibson, Crump, and Messick.

A study of the visual perception of space and architecture. Discussions of the theories of perception; of the problem of the nature of visual depth; of the constancy of the characteristics of perceived objects in relation to geometric space and other related topics. The course will be structured towards a group discussion, problem-solving format between architects and perception-oriented psychologists.

**781-782 Architectural Science Laboratory.** Either term. Credit four to six hours. Open to graduate students only. Projects, exercises, and research in the architectural sciences.

**791-792 Thesis or Research in Architectural Science.** Either term. Credit as arranged. Open to graduate students only.

### The Profession of Architecture

#### Sequence Course

**808 The Practice of Architecture.** Spring term. Credit two hours.

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.

#### Nonsequence Course

**822 Housing Economics and Its Impact on Design.** Credit two hours. Spring term. Open primarily to students in Architecture and Urban Planning and Development. Prerequisite: permission of the instructor. Mr. Obinani.

### Art

Faculty: Mr. Seley, chairman; Messrs. Bosson, Burton, Colby, Daly, Evett, Mahoney, Miss Pederson-Krag, Messrs. Poleskie, Porter, Singer, Squier; visiting critics, and assistants. 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.

### Courses in Theory and Criticism

**309 Color, Form, and Space.** Either term. Credit four hours.

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

**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 and B.F.A. candidates in their final semester.

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

### Studio Courses in Painting

**301-302 Introductory Painting.** Throughout the year. Credit three hours a term.

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.

**303-304 Second-Year Painting—Materials and Methods.** Throughout the year. Credit three hours a term. Prerequisite: Art 301 or 302, or with permission of the instructor.

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

**305 Third-Year Painting.** Fall term. Credit four hours. Prerequisite: 9-12 studio hours depending on major.

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



**306 Third-Year Painting.** Spring term. Credit four 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.

**307 Fourth-Year Painting.** Fall term. Credit four 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.

**308 Senior Thesis in Painting.** Spring term. Credit four hours. Prerequisite: Art 307. Advanced painting project to demonstrate creative ability and technical proficiency.

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

**321 Relief and Intaglio Printmaking.** Either term. Credit three hours. Prerequisite: Three-credit introductory course 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.

**322 Lithography, Silkscreen, Mixed Techniques in Printmaking.** Either term. Credit three hours. Prerequisite: three-credit introductory course or permission of instructor. Study and practice of lithographic and silkscreen printing, and various methods of imprint combined. May be taken to satisfy graphics requirement for art majors.

**323 Advanced Printmaking.** Fall term. Credit four 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.

**324 Advanced Printmaking.** Spring term. Credit four hours. Prerequisite: Art 321 or 322. Continuation and expansion of Art 323.

**325 Senior Printmaking.** Fall term. Credit four hours. Prerequisite: three courses in printmaking. Further study of the art of graphics through both assigned and independent projects executed in various media. Instruction through group discussions and individual criticism.

**326 Senior Thesis in Printmaking.** Spring term. Credit four hours. Prerequisite: three courses in printmaking. Advanced printmaking project to demonstrate creative ability and technical proficiency.

**392 Graduate Printmaking.** Either term. Credit as assigned. May be repeated for credit. For Masters of Fine Arts students in graphic arts. Permission of instructor required. The student is 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

**331-332 Introductory Sculpture.** Throughout the year. Credit three hours a term. A series of studio problems introducing the student to the basic considerations of artistic expression through three-dimensional design. Modeling in plasteline, building directly in plaster, and casting in plaster.

**333-334 Second-Year Sculpture.** Throughout the year. Credit three hours a term. Prerequisite: Art 331 or 332 or with permission of the instructor.

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.

**335 Third-Year Sculpture.** Fall term. Credit four 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.

**336 Third-Year Sculpture.** Spring term. Credit four hours. Prerequisite: Art 335. Continuation and expansion of Art 335.

**337 Fourth-Year Sculpture.** Fall term. Credit four 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.

**338 Senior Thesis in Sculpture.** Spring term. Credit four hours. Prerequisite: Art 337. Advanced sculpture project to demonstrate creative ability and technical proficiency.

**393 Graduate Sculpture.** Either term. Credit as assigned. May be repeated for credit. For Master of Fine Arts students in sculpture. The student is 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 con-

## 36 Courses—Policy Planning and Regional Analysis

sultation, and weekly discussion sessions of works in progress are held.

### Studio Courses in Drawing

**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.

**343-344 Second-Year Drawing.** Throughout the year. Credit two hours a term. Prerequisite: Art 341 or 342 or with permission of instructor.

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

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

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

### Special Studio Courses

**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.

**151 Photography.** Either term. Credit three hours. Open to upperclass majors and others with permission of the instructor.

A basic course in the techniques of still photography. Instruction will be given in the use of the camera and the darkroom. Emphasis will be placed on using the camera as an adjunct to the student's creative vocabulary rather than as a separate creative end. Students are required to provide their own camera. A course fee will be charged.

**401 Special Studio.** Either term. Credit as assigned. May be repeated for credit. Consent of the instructor required.

For B.F.A. degree candidates who wish a greater concentration in drawing, painting, sculpture, or graphics in the upperclass years.

## Policy Planning and Regional Analysis

Faculty: Mr. Jones, Chairman; Messrs. Black, Clavel, Earnhardt, Goldsmith, Hershey, Riordan (on leave), Saltzman, Smith, Swift, Vietorisz, Williams. Visiting Lecturers: Beyers, Isard, and Salama.

Most courses in the Department of Policy Planning and Regional Analysis are open to students in any college of the University who have fulfilled the prerequisites and who have the consent of the instructor.

### Urban and Regional Theory

**410 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.

**419 Informal Study in Urban and Regional Theory.** Either term. Credit as assigned.

**510 Introduction to Urban and Regional Theory.** Fall term. Credit four hours. Messrs. Goldsmith and Smith.

A first-year graduate course on the growth and structure of cities. Eclectic, borrowing theories from economics, sociology, and geography to explain size, functioning, and location of cities and their components.

**[513 Introduction to Human Ecology.** Fall term. Credit three hours. Prerequisite: 510. Not offered 1971-72.]

**519 Informal Study in Urban and Regional Theory.** Either term. Credit as assigned.

**611 Sociology of the Urban Neighborhood.** Spring term. Credit three hours. Prerequisite: 510, or Soc. 332 or equivalent, or consent of the instructor. Mr. Smith.

This course will examine the concept of neighborhood in urban society. It will discuss questions relating to the existence, strength, and viability of neighborhood social and political organization. Major theories of urban social structure will be reviewed in an attempt to arrive at some understanding of the social, political, and physical factors affecting the above questions.

**613 Research Seminar in Urban and Regional Social Structure and Policy Analysis.** Spring term. Credit three hours. Consent of the instructor required. Messrs. Smith and Clavel. An advanced research seminar designed to discuss and investigate some of the implications of urban and regional social structure

on the initiation, formulation, and outcome of public policy. Students will undertake their own exploratory research projects on this subject.

**614 Urban Economics I.** Fall term. Credit two to four hours. Prerequisite: 510, or Econ. 311–312 or equivalent. Mr. Vietorisz.

The course will present broad aspects of urban economic development and planning in a series of lectures, complemented by original research work carried out in working groups. The groups will report in seminars at approximately three-week intervals. Topics include: organization of economic activity in space; economics of transport and industrial location; regional interactions and growth policies; urban transport and commuting problems; intrametropolitan industrial location trends; labor problems and migration; economics of the construction industry; urban infrastructure; the economics of housing and urban renewal; the economics of urban services including education, health, police, fire, waste removal, and general government; the costs of social morbidity and the social defense and welfare establishment; the economics of pollution and environmental controls; and the problems of urban finance. These topics will be presented in the light of a central concern with the political economy of metropolitan development and planning. Existing structures and institutions will be appraised from the point of view of their overall social rationality; and the impact of planning decisions on economic performance and the distribution of income and political power will be analyzed. Special attention will be paid throughout to problems of race, poverty, the dual economy, and the urban ghetto.

**615 Urban Economics II.** Spring term. Credit two to four hours. Prerequisite: 614. Mr. Vietorisz.

**619 Informal Study in Urban and Regional Theory.** Fall term. Credit three hours. Mr. Earnhardt.

Introduction to Population Policy Planning. An examination of the definition and nature, demographic components, social and economic criteria, and developmental status of population policy. Applications to regional and national planning. Demographic aspects of social and economic development and development planning. Population policy in both "underdeveloped" and "developed" areas. A survey of population policies, both implicit and explicit. Special reference to Latin America, the Caribbean, and Puerto Rico.

**714 Metropolitan Land Use: Economic Analysis.** Fall term. Credit three hours. Prerequisites: 510, 615, 533 or permission of the instructor. Mr. Beyers.

The housing market, land-use competition,

location of retail, service, wholesale and manufacturing enterprises. The determination of land values and urban structure and form. Public controls, urban redevelopment, and evaluation of social costs and benefits.

**715 Industrial Location Theory.** Fall term. Credit three hours. Prerequisites: 510, 533, Econ. 311–312 or equivalent. Messrs. Isard and Salama.

Methods of location choice and optimizing. Study of interregional and multi-regional systems, including subnational and international cases. Consideration of compromise procedures, game theory, equity, and strategy as they apply to location theory.

**716 Advanced Seminar in Urban and Regional Theory I.** Fall term. Credit two hours. Prerequisite: 510. 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 intraurban distribution of population and economic activity will be reviewed.

**717 Advanced Seminar in Urban and Regional Theory II.** Spring term. Credit two hours. Prerequisite: 716. Mr. Jones.

A continuation of Planning 716 concentrating on recent developments.

**719 Informal Study in Urban and Regional Theory.** Either term. Credit as assigned.

## Planning Theory and Policy Analysis

**425 Theories and Strategies of Social Change.** Spring term. Credit three hours. Mr. Hershey.

A presentation of major theories and strategies for social change including case examples of attempts to implement them. Special emphasis placed on analyzing social change strategies such as political protest, social movements, advocacy professionalism, and new working class organizing which are appropriate to a Post-Industrial society.

**429 Informal Study in Planning Theory and Policy Analysis.** Either term. Credit as assigned.

**521 Planning Theory.** Spring term. Credit three hours. Prerequisite: 530, 540. Mr. Clavel.

Normative and behavioral models of decision making for the provision of public goods and services. Theories of individual decision and choice are reviewed, followed by applications in organizational context stressing the impact of alternative organizational models on social decision processes.

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**529 Informal Study in Planning Theory and Policy Analysis.** Either term. Credit as assigned.

**620 Planning and Organization Theory.** Fall term. Credit four hours. Prerequisite: second-year standing. 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.

**621 Politics of the Planning Process.** Spring term. Credit four hours. Prerequisite: 510, 521. 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, the 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.

**622 Techniques of Planning Implementation and Control.** Fall term. Credit three hours. Prerequisites: 531, 533. Mr. Black.

The purpose of this course is to examine one subset of new development in interrelated activities. Particular attention will be given to a discussion of the two most well-known versions of the network-based management control system—CPM (Critical Path Method) and PERT (Program Evaluation and Review Techniques). In addition, special attention will be focused upon the use of digital computer simulation as a potentially powerful extension of these systems.

**624 Organizational Change and Public Service Delivery Systems.** Fall term. Credit three hours. Prerequisite: 521. Mr. Hershey. An examination of the operation of the urban political system and policy-making process with particular emphasis on the service outcomes of local public bureaucracies in the education, health, welfare, manpower, police, and environmental protection fields. Community organization, citizen participation, new careers, decentralization, and community control will be analyzed from the perspective of organizational change.

**629 Informal Study in Planning Theory and Policy Analysis.** Either term. Credit as assigned.

**720 Seminar in Planning Theory.** Fall term.

Credit two hours. Prerequisites: 620, 621 or 625. 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.

**729 Informal Study in Planning Theory and Policy Analysis.** Fall term. Credit two hours. Mr. Salama.

Multidimensional Data Structuring and Decision Making. Various procedures for classification selection and optimization in the presence of multiple criteria will be discussed and compared from the point of view of their use in planning. Emphasis will be on applications rather than on mathematical proofs. Basic knowledge of statistics and mathematical programming is, however, required. Students will have to write a term paper in which they will apply the tools previewed in this seminar to a problem of their choice approved by the instructor.

## Methods for Planning Analysis

**439 Informal Study in Planning Analysis.** Either term. Credit as assigned.

**530 Mathematical Concepts for Planning.** Fall term. Credit one, two, or three hours. Prerequisite: permission of instructor.

An introductory course for students having little or no background in college mathematics. Basic concepts in matrix algebra, calculus, and probability will be covered in self-contained units of one credit hour each. Students may register for any or all of these topics. Mathematics 201, Mathematics for the Social Sciences, is an acceptable substitute for this course.

**531 Statistical Analysis for Planning.** Spring term. Credit three hours. Prerequisite: 530 or equivalent and permission of the instructor. An introduction to basic methods of statistical analysis with an emphasis on their use in the decision-making process in planning. Material in decision theory, sampling, estimation, hypothesis testing, and prediction will be introduced.

**533 Planning Analysis.** Spring term. Credit four hours. Prerequisite: 531. Mr. Jones. City planning applications of general analytical techniques of social science, population, economic, and spatial models.

**536 Introduction to Computers in Planning.** Fall term. Credit 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 PL/1 or another appropriate programming language. Brief introduction to computer systems and the use of library

routines. Advantages and limitations of using computers will be considered.

**539 Informal Study in Planning Analysis.** Either term. Credit as assigned.

**630 Planning Public Investments.** Fall term. Credit three hours. Prerequisite: second-year standing. Mr. Black.

A detailed and rigorous examination from the point of view of theory and practice of selected methods and techniques of analysis used in the planning and evaluation of public investments. The primary focus of the course is upon the discussion of benefit cost-analysis, cost effectiveness analysis, and capital budgeting, and the integration of these methods in planning-programming budgeting systems.

**[631 Research Methods in Planning.** Spring term. Credit three hours. Not offered in 1971-72.

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.]

**632 Analyses for Planning Decisions I.** Fall term. Credit three hours. Prerequisite: second-year standing. Mr. Saltzman.

This course and PPRA 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; the use of probability and statistics in drawing inferences from measurable experiences; and relevant topics in probability, sampling, estimation, hypothesis testing, and prediction will be considered.

**633 Analyses for Planning Decisions II.** Spring term. Credit three hours. Prerequisite: 632. Mr. Saltzman.

A continuation of PPRA 632. This course 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, simulation, and cost/benefit analysis. Applications in the public sector will be examined as appropriate.

**639 Informal Study in Planning Analysis.** Either term. Credit as assigned.

**732 Techniques of Regional Accounting.** Fall term. Credit three hours. Prerequisites: 533, Econ. 312 or equivalent.

Methods of construction of the regional, social accounts and their application to regional planning. Measuring levels of activity within regions such as income and product accounts are emphasized as well as methods of estimating flows between regions such as balance of payment accounts.

**733 Industrial Analysis and Linear Models.** Spring term. Credit three hours. Prerequisites: 533. Messrs. Isard and Salama.

Examination of comparative costs, industrial complex analysis, regional input-output, inter-regional linear programming techniques, general regional equilibrium theory, gravity and other spatial interaction models, and other general social theory and methodology relevant to the understanding of urban and regional structures.

**739 Informal Study in Planning Analysis.** Either term. Credit as assigned.

## Planning Institutions, Programs, and Practice

**440 Introduction to Urban Planning Theory and Practice.** Three credit hours. Mr. Smith.

An undergraduate course designed to introduce the student to the practice of urban planning within the context of the major bodies of theory utilized in planning. Urban and regional theory and planning theory will be examined, and their usefulness and applications to planning activities and urban problems will be highlighted. The course will strive to place our concerns with these problems within the context of the process of urban growth and development. To this end, laboratory sessions will be held for the playing of the Community Land-Use Game (CLUG). This game is a heuristic device designed to elucidate some of the major factors in urban development, and offers the opportunity for experimenting with various policies and actions aimed at alleviating simulated urban problems.

**540 Introduction to Planning Institutions.** Fall term. Credit three hours. Mr. Clavel.

A survey of contemporary organizational forms and political forces facilitating and inhibiting the development of planning at the city, state, and regional level. The development of planning practice in the areas of urban land use, regional economic development, health, and welfare and other services. The focus is on subnational planning in the United States, but the national context and other nations are dealt with where appropriate.

**541 Planning Practice.** Spring Term. Credit three hours. Mr. Swift.

Application of planning principles and techniques to community situations including



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working with town and county governments and planning officials to analyze and evaluate community conditions, problems, goals, priorities, resources, and activities. Development of comparative frameworks for policy analysis.

**542 Internship in Planning and Policy Analysis.** Summer term. Credit three to six hours. Prerequisite: second-year standing. Staff.

**640 Field Problem in Planning Methods.** Fall term. Credit three hours. Prerequisite: second-year standing. Staff.

This course will offer the student the opportunity to apply theories and techniques of analysis and planning to real problem situations. Some sections of the course will have the opportunity of working with low-income groups and developing 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. Other sections of the course will work on plans and programs related to the efforts of official planning agencies.

While the course series has been developed primarily for graduate students in other departments, any nondepartmental student who may wish to enroll in this course should contact the faculty members in charge.

**641 Field Problem in Planning Methods.** Spring term. Credit three hours. Prerequisite: second-year standing. Staff.

The follow-up of work begun in PPRA 640 to provide continuous planning services to client groups. PPRA 640 not prerequisite to this course.

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

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

**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.

**649 Informal Study in Planning Practice.** Either term. Credit as assigned.

**749 Informal Study in Planning Practice.** Either term. Credit as assigned.

## Urban and Environmental Systems Planning

**457 The Public Economy of Urban Areas.** Spring term. Three credit hours. Prerequisite: Introductory courses in economics and sociology. Mr. Williams.

The purpose of this course is to explore and analyze the structure and function of the public economy in urban areas. The conceptual framework is derived from the economic theories of consumption, resource allocation, and community welfare in the urban public sector. Analyses will focus on community decision behavior in a nonmarket context, and the political economics of strategic choices and jurisdictional autonomy in the presence of social and economic diseconomies. The reasoning and methodology of sociology and welfare economics will be used to examine socioeconomic and political phenomena, formulate policy alternatives, and develop paradigms for planning and inter-governmental relations.

**551 Planning and Management Information Systems.** Spring term. Credit three hours. Prerequisite: 536. Mr. Saltzman.

Consideration of methods and techniques for the design and use of computer-based information systems in planning. The role of the computer and its effects on various administrative, control, and decision functions are also discussed. Important hardware and software considerations in storing, processing, and retrieving of management information are covered including data structures, on-line and batch processing, multiprogramming, interrupts, file organization, etc. Applications in various public and medical organizations are examined. Students are expected to program and run assigned problems on the Cornell computer system.

**650 Seminar in Urban and Regional Information Systems.** Fall term. Credit three hours. Prerequisite: 551. Mr. Saltzman.

An examination of problems, methods, and uses of computer-based information systems in urban and regional planning. Topics to be covered will vary from year to year and may, for example, include definition, acquisition, and organization for large-scale data bases; economic considerations in the use of information systems; analysis of application in transportation, housing, health, and land-use studies; applications of computer graphics in planning.

**652 Environmental Health Planning.** Fall term. Credit two hours. Prerequisite: second-year standing. Mr. Hagevik.

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.

**653 Planning and Evaluation of Environmental Health Programs and Projects.** Spring term. Credit three hours. Prerequisite: second-year standing.

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 methodological competence to the application of these methods in the study of the particular problems of environmental health. Topics to be 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.

**659 Informal Study in Urban Systems Planning.** Either term. Credit as assigned.

**759 Informal Study in Environmental Health Planning.** Either term. Credit as assigned.

## **Regional Economics and Development Planning**

**660 Introduction to Regional Development Planning.** Fall term. Credit four hours. Prerequisite: second-year standing. Mr. Goldsmith.

The course will focus on problems of and theories about development of lagging, underdeveloped, or poor regions of industrial 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.

**663 Regional Planning and Development in Developing Countries.** Spring term. Credit four hours. Prerequisite: second-year standing. Mr. Goldsmith.

Selected theories and development problems from PPRA 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. The class will focus on the process of regional development through urbanization and will look in particular at the concepts of equity and efficiency, external economies, export linkages, and internal self-sufficiency and integration. Resource development, national integration, human development, and migration problems will be discussed.

**669 Informal Study in Comparative Planning.** Either term. Credit as assigned.

**760 Regional Economic Growth Theory.** Fall term. Credit three hours.

**761 Multivariate Models of Regional Economic Growth.** Spring term. Credit three hours.

**763 Planning Techniques for Developing Regions and Small Nations.** Spring term. Credit four hours. Prerequisites: 660, 663, or 760. Mr. Goldsmith.

The course will simulate the work of a consulting team's proposals and analyses of policies for development of various sectors and problem areas, e.g., manufacturing, agriculture, health, education and services, infrastructure, urbanization, exports. The problem will be approached with as much realism as is possible in an academic setting, and the course will concentrate on a particular region. The final product of the course will be a set of plans. Course requirements include minimal general reading, extensive research on a topic of interest, an interim written and verbal report on the research, and a written final report, including proposals, to be summarized in a verbal presentation.

**769 Informal Study in Regional Planning.** Either term. Credit as assigned.

## **Social Planning, Health Systems, and Housing**

**570 Introduction to Social Policy.** Fall term. Credit three hours. Mr. Hershey.

A presentation of traditional and emergent theories of inequality and of issues involved in formulating and implementing social policies. Particular emphasis will be placed on the limitations of contemporary welfare state social policies.

**579 Informal Study in Housing Plans and Programs.** Either term. Credit as assigned.

**671 Seminar in Social Policy Research and Analysis.** Spring term. Credit three hours. Prerequisite: 570. Mr. Hershey.

The focus will be on examining contemporary methods of social policy analysis, especially their ideological implications, and developing multidisciplinary approaches to selected social policy issues. The dilemmas of action research and of implementing research findings will be explored.

**672 Poverty and Planned Social Change.** Fall term. Credit three hours. Prerequisite: second-year standing. Mr. Williams.

Analysis of the etiology of poverty in the United States through examination of institutional, political, and socioeconomic factors. Structural analysis of the American social system: distribution of power and wealth; the nature of inequality; the goals and objectives of the public welfare system; the notion of poverty as a concomitant of monopoly capitalism; social welfare and social cost arguments; aspects of social theory related to

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poverty, stratification, racialism and social systems maintenance. Policy strategy and action priorities for planned societal change. Radical critique of public policy and interest group behavior; political action and coalition formation; interest group advocacy; gradualist assimilation; revolutionary action movements.

**673 Seminar in Aspects of Plans and Policies for Development and Transformation of the American Black Community.** Spring term. Credit three hours. Prerequisite: second-year standing. Mr. Williams.

An intensive review and analysis of aspects of the nature and causes of the past and present circumstances of the American Black community with special emphasis on the political economics and social and ideological imperatives for structural transformation and sustained development. In the process of description and examination, the course will attempt to sharpen the perspective of both theoretical and programmatic considerations concerning the internal structure of Black communities and the power and social exchange relations between the Black community and the external economic, institutional, and sociopolitical environment.

**674 Seminar on Mental Health Planning.** Fall term. Credit three hours. Prerequisite: second-year standing. Mr. Swift.

Seminar discussions of the development and performance of institutions for the care of the emotionally disturbed, including mental illness, drug abuse, and alcoholism. Analysis of program approaches, philosophies and assumptions of clinical and community care. Emphasis will be placed on planning for processual and spatial aspects of prevention of disorders, using case studies and existing research as a foundation. Enrollment is limited.

**676 Social and Economic Elements of Urban Public and Private Housing.** Fall term. Credit three hours. Prerequisite: second-year standing. Mr. Williams.

Analysis of factors bearing on urban housing as a unique social and economic commodity. Special emphasis on the role of planning. Review of substantive issues and methodology including market analysis and the operation and performance of submarkets; the housing element in land-use plans; acquisition and allocation of space for development of housing; economics of the supply of and demand for urban housing; public action in the housing sector; federal government housing policies and programs; social aspects of housing and urban neighborhood environment; housing policy development and the formulation of realistic housing goals at the national and subnational level.

**677 Seminar in Comprehensive Health Planning.** Spring term. Credit three hours.

Designed especially for students in city and regional planning, sociology, and the Sloan Institute of Hospital Administration, this is an integrative seminar on comprehensive health planning. By focusing on contemporary issues the course attempts an interdisciplinary approach to the study of planning, organization, and delivery of health services and tries to demonstrate the relations between theoretical and practical aspects of comprehensive health planning. Social, economic, and political considerations of the health planning endeavor, as well as technical and organizational developments, are analyzed and discussed from a conceptual and pragmatic standpoint. Wherever possible, health planning comparisons with other countries are drawn from the literature.

**679 Informal Studies in Social Planning.** Either term. Credit as assigned.

**779 Informal Study in Health Systems Planning.** Either term. Credit as assigned.

### Planning Research

**490 Undergraduate Honors Research.** Either term. Credit as assigned.

**698 Thesis Research.** Fall term. Credit as assigned.

**699 Thesis in Urban and Regional Planning.** Spring term. Credit as assigned.

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

**799 Dissertation in Urban and Regional Planning.** Either term. Credit as assigned. Advanced independent research by candidates for the Ph.D. degree.

### Urban Planning and Development

Faculty: Mr. Stein, Chairman; Messrs. Czarnski (on leave), Hugo-Brunt, Kelly (on leave), Lyall, Mackesey, Obinani, Parsons, Reps, Richardson, Stewart, Winston, and visiting lecturers.

Most courses in the Department of Urban Planning and Development are open to students in any college of the University who have fulfilled the prerequisites and who have the consent of the instructor.

### Historical Development of Urban Areas

**409 Informal Study in the Historical Development of Urban Areas.** Either term. Credit

as assigned. For upper-level undergraduates. Staff.

**400/500 Historical Development of the World's Cities I.** Fall term. Credit three hours. Mr. Hugo-Brunst.

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.

**401/501 Historical Development of the World's Cities II.** Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Hugo-Brunst.

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.

**601 Methods of Archival Research. (Arch. 462).** 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.

**602 Architecture and Planning in the Orient. (Architecture 435).** Fall term. Credit four hours. Prerequisite: Arch. 401, or UPD 500 or 501, or permission of the instructor. Mr. Hugo-Brunst.

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

**603 Seminar in the History of American City Planning.** Spring term. Credit three hours. Prerequisite: UPD 500 or permission of the instructor. Mr. Reps.

**[604 The History of Colonial Planning.** Fall term. Credit three hours. Prerequisite: Arch. 400, or UPD 500, or History 371, or permission of the instructor. Mr. Hugo-Brunst. Not offered in 1971-72.

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

**605 Introduction to the History of Landscape Architecture and Design.** Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Hugo-Brunst.

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.

**609 Informal Study in the Historical Development of Urban Areas.** Either term. Credit as assigned. Master's level. Staff.

**701 Seminar in American Urban History.** Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Stewart.

Seminar in the historical evolution of the American city. Emphasis on factors in urban growth, the process of urbanization, urban reform movement, intellectual and social responses to the city.

**709 Informal Study in the Historical Development of Urban Areas.** Either term. Credit as assigned. Ph.D. level. Staff.

## Urban Planning Principles, Theory, and Process

**410/510 Introduction to Concepts and Principles of Urban Planning and Development.**

Fall term. Credit four hours. Upper-level undergraduates admitted only by permission of the instructors. Messrs. Reps and Stewart. An examination of city plans and city planning in the United States from the period of colonization to the present time. Following a survey of the history of American planning, the course reviews the major problems of city development and the solutions advanced to improve urban conditions. While major emphasis is placed on issues involving physical development, the course also introduces the student to related social, political, economic, and legal matters with which modern urban planning is concerned. Lectures, seminars, reading, and research papers.

**411/511 Introduction to Urban Planning.** Spring term. Credit one hour. May not be taken for credit by those who have taken UPD 410 or 510. Staff.

A concise survey of urban planning and development for students seeking an introduction to the field. Consists of lectures given by various members of the staff and visitors.

**[512 Introduction to Human Ecology.** Fall term. Credit three hours. Not offered in 1971-72.]

**[610 Planning the Neighborhood.** Fall term. Credit three hours. Mr. Stein. Not offered in 1971-72.

An 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.]

**611 The Urban Development Process.** Spring term. Credit two hours. Mr. Reps, staff, and visitors.

Presentation of case studies of urban planning and development programs by persons having a current or recent involvement in professional practice.

**[612 Seminar in Urban Land Use and Industrial Location.** Fall term. Credit four hours. Mr. Czamanski. Not offered in 1971-72.

The spatial arrangement of urban functions, value as a 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 centers. In addition, the course topics will include interregional location theory and review of various techniques of selecting optimum locations, the effects of new plants upon regional development, and 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.]

**619 Informal Study in Urban Planning Principles, Theory, and Process.** Either term. Credit as assigned. Master's level. Staff.

**719 Informal Study in Urban Planning Principles, Theory, and Process.** Either term. Credit as assigned. Ph.D. level. Staff.

## Methods and Techniques of Planning Analysis

**520 Introduction to Quantitative Techniques in Urban Planning I.** Spring term. Credit four hours. Miss Lyall.

Basic coverage of urban planning applications of population and migration studies, regional economic description methods, regional social accounting including income and product, balance of payments, money flows, interindustry and wealth accounts, theories and methods of forecasting urban growth, land use and transportation models. Knowledge of mathematics is not a precondition for admission but ability to master some during the course is assumed.

**[521 Introduction to Quantitative Techniques in Urban Planning II.** Spring term. Credit four hours. Mr. Czamanski. Not offered in 1971-72.

A continuation of the exploration of methods such as linear and nonlinear programming, elements of game theory, some statistical techniques such as regression and variance, and multivariate analysis are covered.]

**523 Methods and Techniques of Land-Use Planning.** Spring term. Credit three hours. Mr. Stein.

Surveys, analyses, and plan-making techniques for use in guiding physical expansion and renewal of urban areas; location requirements, space needs, and interrelationships of various classes of land use with special emphasis on residential, commercial, and industrial activities and community facilities; standards and survey methods for determining housing conditions and quality of the residential environment.

**[620 Seminar in Regional Social Accounting.** Fall term. Credit three hours. Mr. Czamanski. Not offered in 1971-72.

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.]

**[721 Seminar in Regional Interindustry Analysis and Programming.** Spring term. Credit three hours. Mr. Czamanski. Not offered in 1971-72.

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

**[724 Seminar in Regional Development Models.** Fall term. Credit three hours. Prerequisite: UPD 720 or 721, or equivalent, or permission of instructor. Mr. Czamanski. Not offered in 1971-72.

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.]

**[725 Econometric Methods in Regional Planning.** Spring term. Credit three hours. Continuation of UPD 724. Mr. Czamanski. Not offered in 1971-72.

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 and Development Controls and Implementation

**[430 Controls and the Planner and Architect.** Fall term. Credit three hours. Mr. Kelly. Not offered in 1971-72.

A broad survey of the constraints upon the architect, planner, and urban designer placed directly by public codes and regulations, and sources of funds, and indirectly by producers, distributors, labor organizations, public agencies, and consumer groups. The aim is to give an understanding of the objectives and methods of the various controls and to suggest steps for coordination, simplification, and rationalization in order to encourage design advances while guarding public safety and welfare.]

**439 Informal Study in Planning and Development Controls and Implementation.** Either term. Credit as assigned. Undergraduate level. Staff.

**531 Legal Aspects of Planning.** Spring term. Credit three hours. Prerequisite: UPD 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.

**630 Urban Land Policy and Programs.** Fall term. Credit three hours. Prerequisite: UPD 531 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.

**632 Metropolitan Growth, Open Space, and New Communities.** Fall term. Credit three hours. Prerequisite: permission of the instructors. Messrs. Reps and Stewart.

Beginning with an investigation of metropolitan growth patterns and the use of regional open space in shaping the form of urban development, the seminar concentrates on the role of new communities in accommodating expected future population. Historical and contemporary examples of new towns programs in the United States and abroad are examined, and current and proposed state and federal legislation is reviewed. Seminars, assigned reading, research papers.

**639 Informal Study in Planning and Development Controls and Implementation.** Either term. Credit as assigned. Master's level. Staff.

**739 Informal Study in Planning and Development Controls and Implementation.** Either term. Credit as assigned. Ph.D. level. Staff.

## Physical and Aesthetic Aspects of the Urban Environment

**449 Informal Study in Physical and Aesthetic Aspects of the Urban Environment.** Either term. Credit as assigned. Undergraduate level. Staff.

**540 Introduction to Environmental Planning and Design.** Fall term. Credit four hours. For graduate planning students. All other students must obtain permission of the instructor. Mr. Richardson.

An introduction to the basic concepts and issues of environmental planning and design. Topics covered will include the structure of space and function and the interrelations between them within the context of a range of designed and undesigned environments. Basic techniques of representation (graphic and nongraphic), analysis, and modeling will be reviewed and an understanding of the design process developed. No previous training in design is required.

**541 Planning Design.** Spring term. Credit four hours. Prerequisite: UPD 540. Mr. Richardson.

An analysis of the requirements of program and context and their reformulation as determinants of spatial organization. Emphasis will be placed on the development of spatial concepts based on prepared evaluation of the site, taking into consideration the influences of functions, culture and life styles, and other ecological factors, as well as the development of a framework for evaluating the nonphysical implications of existing physical-spatial organizations in different environmental contexts. The necessary theories, methods, and techniques of planning design introduced in 540 will be elaborated upon and applied in studio problems.

**[640 Seminar in Urban Design.** Fall term. Credit three hours. Prerequisite: Arch. 105, or UPD 540, or permission of the instructor. Mr. Stein. Not offered in 1971-72.

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.]

**[642 Advanced Physical Planning and Design Methodology.** Fall term. Credit four hours. Prerequisite: UPD 540, Arch. 105, and permission of the instructor. Mr. Richardson, visiting lecturers, and staff. Not offered 1971-72.

A survey of the different approaches for formulating planning programs for physical design, including traditional comprehensive planning and more recent functional and



problem-specific methods. The different models used in physical planning and design, e.g., land-use models, two- and three-dimensional spatial models and recent analytic models using simulation techniques and graph theory will be examined and problems of transformations from nonphysical to physical models discussed. Illustrative problems will be covered in studio sections.]

**[643 Seminar in the Theories and Concepts of Environmental Design.** Spring term. Credit three hours. Prerequisite: UPD 540 and 541, and permission of the instructor. Mr. Richardson and visiting lecturers. Not offered in 1971-72.

A study of the changing concepts of space and function based on past and present aesthetic theories and recent advances in the areas of social psychology, visual perception, and cultural anthropology. The seminar will aim at understanding the relations of technical and social functions to the physical organization of the environment at different scales and examine the ways in which these changing concepts and relations affect the design process.]

**649 Informal Study in Physical and Aesthetic Aspects of the Urban Environment.** Either term. Credit as assigned. Master's level. Staff.

**749 Informal Study in Physical and Aesthetic Aspects of the Urban Environment.** Either term. Credit as assigned. Ph.D. level. Staff.

## Urban Renewal and Housing

**451/551 Introduction to Government Programs for Urban Renewal.** Spring term. Credit three hours. Mr. Winston.

A survey course reviewing the development of governmental policy in the urban renewal field. A presentation of the major governmental programs at the federal and state levels aimed at renewing and developing cities and improving housing conditions in the United States. Several important case studies are examined.

**553 Housing Economics and Its Impact on Design.** Spring term. Credit two hours. Mr. Obinani.

The course will bring together the various cost considerations which determine the final outcome of housing design for specific client groups. It will analyze the influence of mortgage and other private financing institutions on housing location and form and the impact of federal and state housing programs. The course will also deal with some of the ancient myths and theories of housing economics: low-income vs. low-cost housing; moderate- and middle-income housing; emphasis on "industrialized housing" as a cost-saving technique, financing strategies, especially the nonprofit vs. profit sponsorship of housing,

professional intervention into political housing decisions, single-family housing vs. cooperatives and condominiums, communal services and facilities related to housing, etc. It will be conducted as a "learning laboratory" which will include lecture-workshops, seminars, and original research and presentation by students. In the main, the workshop will aim to develop new approaches to the analysis of costs on housing form and location. It will use these analytical methods to evaluate the impact of public intervention, the role of institutional decision-making on housing design and production processes, as well as the role of the professional architect and planner on the characteristics of housing supply and demand.

**651 Urban Politics and Planning.** Spring term. Credit three hours. Mr. Stewart.

A consideration of the political dimension of planning and renewal activities. Emphasis on governmental mandate and structure, as well as interest group and power relationships as they are related to developmental decision-making processes. Theory and case study analyses.

**[653 Housing and the Community.** Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Kelly. Not offered in 1971-72.

Analysis of the special problems in urban design and in the provision of community facilities resulting from the current encouragement of industrial methods, scale, and speed in housing. Attention will be concentrated on the social requirements encountered in large-scale developments, and on the administrative procedures by which these requirements may be met. Experience in European countries, where government agencies directly administer such developments, will be cited.]

**659 Informal Study in Urban Renewal and Housing.** Either term. Credit as assigned. Master's level. Staff.

**759 Informal Study in Urban Renewal and Housing.** Either term. Credit as assigned. Ph.D. level. Staff.

## Institutional and Public Facilities Planning

**[661 Institutional Planning.** Spring term. Credit three hours. Prerequisite: UPD 510 or permission of the instructor. Mr. Parsons and visitors. Not offered in 1971-72.

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 institu-



tional systems. Application of city planning techniques to institutional planning.]

**669 Informal Study in Institutional and Public Facilities Planning.** Either term. Credit as assigned. Master's level. Staff.

**769 Informal Study in Institutional and Public Facilities Planning.** Either term. Credit as assigned. Ph.D. level. Staff.

## Urban Planning Practice

**470/570 Workshop in Community Problems.** Either term. Credit variable with a maximum of six hours. Prerequisite: permission of the instructor. Mr. Stein.

This workshop permits upper-level undergraduates or beginning graduate students to undertake field work projects in the community offered by the Human Affairs Program at Cornell. The projects will be directed by staff of the Human Affairs Program, but students' work will be reviewed by the instructor and other members of the Department faculty.

**474/574 Community Development Processes and Programs. (Architecture 831).** Fall term. Credit four hours. Mr. Obinani.

Specific processes of development of community groups and their neighborhoods will be examined with selected types of client groups. Special attention will be given to the ideas and programs incorporated in the Community Self-Determination Act introduced into the Congress in 1969. Some of these processes and activities include community development corporations, phases of advocacy, training programs for client groups, public intervention methods, community organizations, etc. Financing their management of community development processes will also be given attention.

**572 Program Planning for Community Action Groups.** Fall term. Credit four hours. Messrs. Stein and Martinez.

The course will familiarize students with the practical problems of organization, planning, programming and development of an urban community action group. It will offer students an opportunity to apply planning skills to help such a group define and meet the needs of its people. An additional objective is to provide the opportunity for students to learn more about a specific minority group, and to begin to understand the cultural, social, and other characteristics of such a population. In this case, the group will be a Spanish-speaking community, primarily Puerto Rican.

**575 Workshop in Urban Renewal and Housing.** Spring term. Credit four hours. Mr. Stein. Surveys and analyses of urban renewal and

housing problems in specific communities and urban areas. Preparation of plans based upon existing public legislation and funding mechanisms, and the development of new programs for solution of current housing and renewal problems.

**[670 Workshop in Urban Planning and Development.** Fall term. Credit six hours. Primarily for second-year master's level students in the UPD department. Others permitted to enroll only by permission of the instructor. Mr. Stein and staff. Not offered in 1971-72. Research and analysis in an urban area leading to the preparation of comprehensive and functional area plans and effectuation programs; lectures, field trips, and individual and group reports.]

**672 Internship Program in Urban Planning and Development.** Summer term. Credit three hours. Open to graduate students in planning and others by permission. Mr. Stein, 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.)

**679 Informal Study in Urban Planning Practice.** Either term. Credit as assigned. Master's level. Staff.

## Urban Planning and Development Research

**490 Undergraduate Honors Research.** Either term. Credit as assigned. Staff.

**690 Special Projects in Urban Planning and Development.** Credit variable to maximum of six hours. Either term. Staff.

**699 Thesis in Urban Planning and Development.** Either term. Credit six hours. Staff.

**790 Planning Research Seminar.** Fall and Spring terms. Credit one hour. Staff. Presentation and discussion of current departmental research.

**799 Dissertation in Urban Planning and Development.** Either term. Credit as assigned. Staff.



# Register

## University Administration

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Lewis H. Durland, University Treasurer  
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W. Keith Kennedy, Vice Provost  
Samuel A. Lawrence, Vice President  
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E. Hugh Luckey, Vice President  
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Arthur H. Peterson, University Controller  
Richard M. Ramin, Vice President for  
Public Affairs  
Robert F. Risley, Vice Provost  
Neal R. Stamp, Secretary of the Corporation  
and University Counsel

## College Administration

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Charles W. Pearman, B.Arch., Associate  
Dean of the College  
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M.R.P., Assistant to the Dean for Minority  
Student Affairs  
Howard E. Bullock, Clerk of the Works  
Rose Zakour (Mrs.), Administrative Aide

## Faculty

### Architecture

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Hubert E. Baxter, B.Arch., Professor of  
Architecture, Emeritus  
Ludlow D. Brown, M.Arch., Professor of  
Architecture, Emeritus

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Alan Chimacoff, B.Arch., M.Arch., Visiting  
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Professor of Architecture  
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Professor of Architecture  
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M.R.P., Assistant Professor  
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Architecture  
Francis W. Saul, B.S., M.S., P.E., Associate  
Professor of Architecture

## 50 Faculty

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 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., Professor of Urban Planning and Design  
 Frederick M. Wells, B.Arch., Andrew Dickson White Professor of Architecture, Emeritus  
 J. Alan Wells, B.Arch., Assistant Professor of Architecture

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 Stephen Porter, B.A., M.F.A., Assistant Professor of Art  
 Arnold Singer, Associate Professor of Art  
 Jack L. Squier, B.S., M.F.A., Professor of Art

## Policy Planning and Regional Analysis

Barclay Jones, B.A., B.Arch., M.R.P., Ph.D., Chairman; Professor of City and Regional Planning; Acting Director of the Center for Urban Development Research  
 Alan Black, A.B., M.C.P., Instructor of City and Regional Planning  
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 Henry W. Richardson, B.Arch., M.Arch., M.R.P., Assistant Professor of City and Regional Planning  
 Ian R. Stewart, B.A., M.R.P., Instructor in City and Regional Planning  
 Oliver C. Winston, B.A., B.S. in Arch., Lecturer in City and Regional Planning

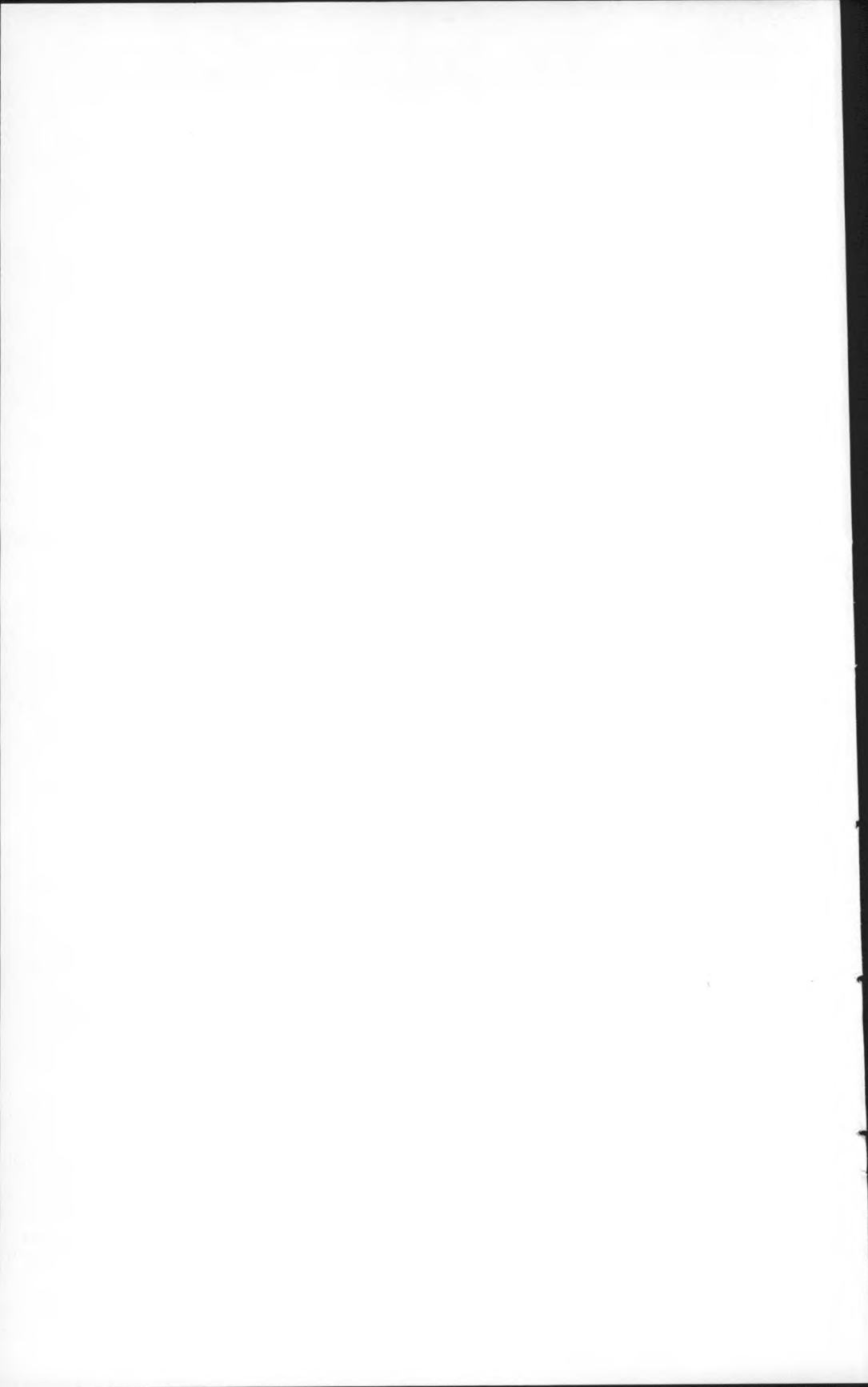
## Student Body, Fall 1971

Total Enrollment	495
Undergraduates	368
Architecture	270
Art	98
Men	257
Women	111
Graduates	127
Architecture	31
Art	12
Planning	84
Men	104
Women	23

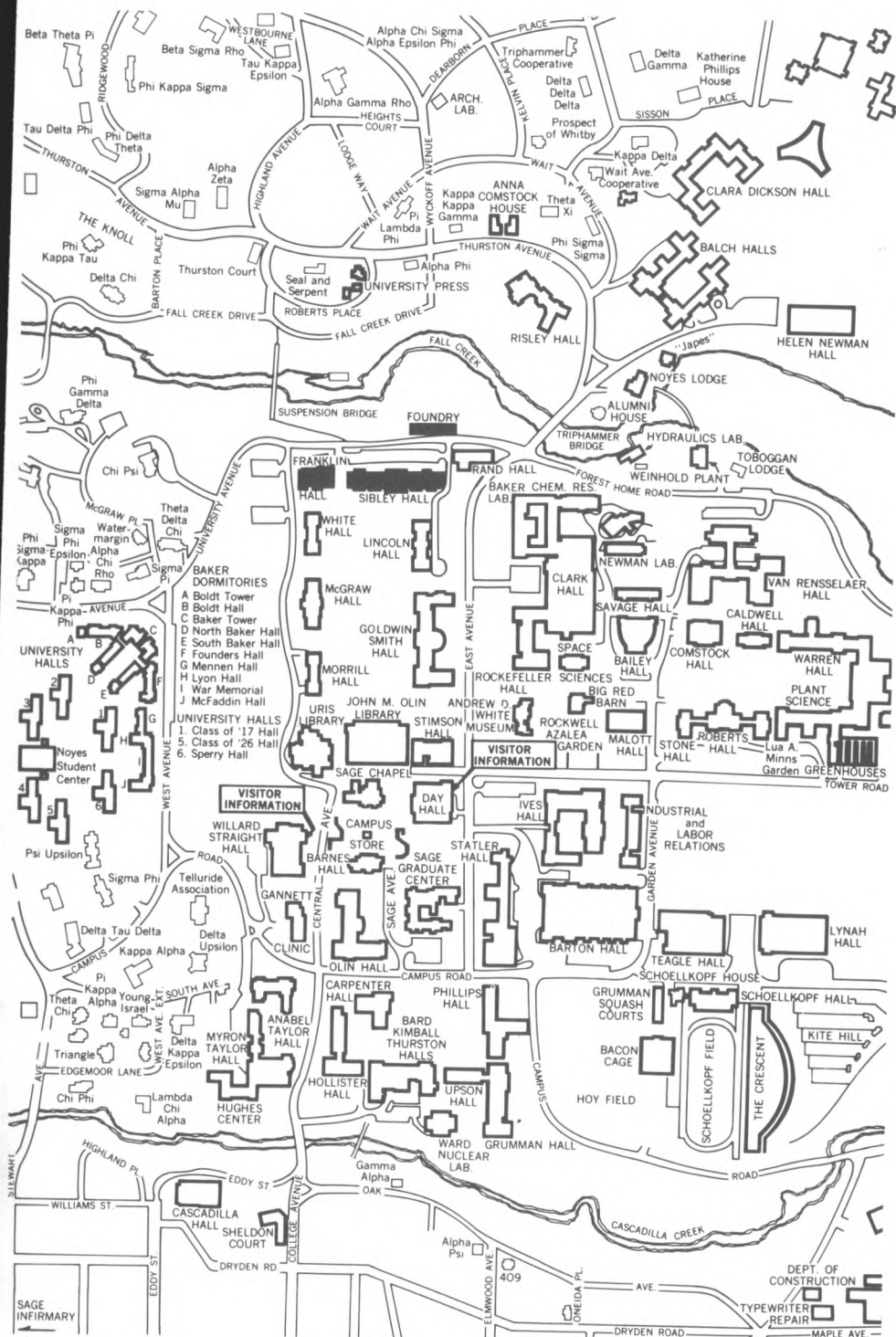
## Geographical Distribution

United States	457
Arizona	1
California	20
Colorado	2
Connecticut	20
Delaware	2
District of Columbia	6
Florida	2
Georgia	4
Hawaii	2

Illinois	18	Virginia	6
Indiana	5	West Virginia	1
Iowa	1	Wisconsin	5
Kansas	3	Foreign	38
Louisiana	1	Canada	8
Maryland	21	Chile	1
Massachusetts	28	China	1
Michigan	4	Colombia	2
Minnesota	2	England	2
Missouri	7	France	2
Nebraska	1	Greece	1
New Hampshire	4	Hong Kong	1
New Jersey	35	India	3
New Mexico	1	Indonesia	1
New York	168	Iran	1
North Carolina	1	Italy	1
Ohio	25	Japan	3
Oklahoma	2	Korea	2
Pennsylvania	36	Mexico	1
Puerto Rico	11	Pakistan	1
Rhode Island	4	Switzerland	1
South Carolina	1	Trinidad	1
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Vermont	2	Yugoslavia	1









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## **Cornell University Announcements**

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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  
School of Hotel Administration  
New York State School of Human Ecology  
New York State School of Industrial and  
Labor Relations  
Officer Education (ROTC)  
Summer Session

Undergraduate preparation in a recognized college or university is required for admission to certain Cornell divisions, for which the following *Announcements* are available:

Graduate School  
Graduate School: Course Descriptions  
Law School  
New York State Veterinary College  
Graduate School of Business and Public  
Administration  
Graduate School of Nutrition  
Medical College (New York City)  
Cornell University-New York Hospital  
School of Nursing (New York City)  
Graduate School of Medical Sciences  
(New York City)

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Edmund Ezra Day Hall  
Ithaca, New York 14850

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