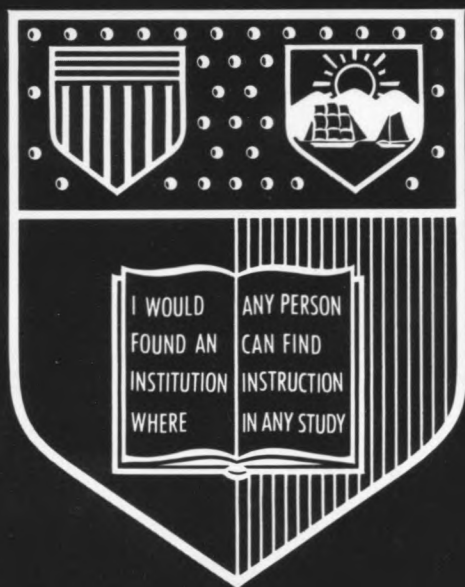


Cornell University Announcements



College of
Architecture,
Art, and
Planning

Cornell University

College of Architecture, Art, and Planning

1977-78

Cornell University Announcements

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Cornell Academic Calendar

1977-78

Registration, new students
Registration, continuing and rejoining students
Fall term instruction begins
Thanksgiving recess:
 Instruction suspended, 1:10 p.m.
 Instruction resumed
Fall term instruction ends, 1:10 p.m.
Final examinations begin
Final examinations end
Registration, new and rejoining students
Registration, continuing students
Spring term instruction begins
Spring recess:
 Instruction suspended, 1:10 p.m.
 Instruction resumed
Spring term instruction ends, 1:10 p.m.
Final examinations begin
Final examinations end
Commencement Day

Thursday, September 1
Friday, September 2
Monday, September 5

Wednesday, November 23
Monday, November 28
Saturday, December 10
Thursday, December 15
Friday, December 23
Thursday, January 19
Friday, January 20
Monday, January 23

Saturday, March 18
Monday, March 27
Saturday, May 6
Monday, May 15
Tuesday, May 23
Monday, May 29

Summer Session Calendar, 1978

Three-Week Session
Eight-Week Session
Six-Week Session

June 5-June 27
June 19-August 11
June 28-August 11

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

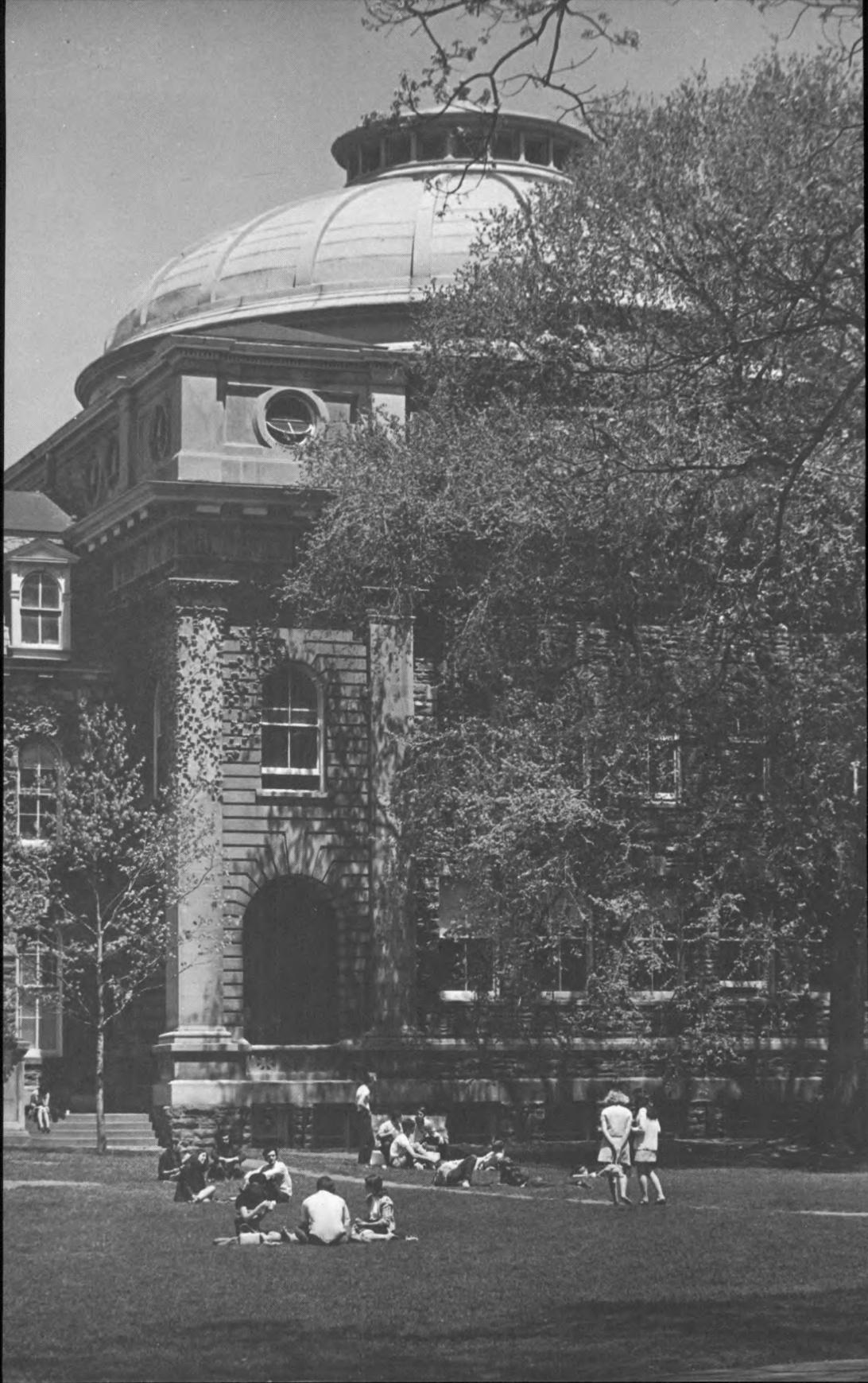
In enacting this calendar, the University has scheduled classes on religious holidays. It is the intent of the University that students missing classes due to the observance of religious holidays be given ample opportunity to make up work.

Announcements

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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 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 first 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 this interest. 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 a continually expanding library and store of illustrative materials.

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 College celebrated the centennial of professional instruction in architecture and a bronze portrait head of Professor Babcock was placed in the south porch of Sage Chapel as a part of the celebration.

The College offers three programs leading to the bachelor's degree—the five-year program in architecture leads to the Bachelor of Architecture; four-year programs in art and architecture lead to the Bachelor of Fine Arts; and a four-year program with a concentration in city and regional planning leads to the Bachelor of Science. These four programs have entirely different objectives that are described in detail in the following sections.

The College offers graduate-level programs in: art, architectural design and urban and regional design,

architectural sciences, history of architecture and urban development, preservation planning, city and regional planning and related programs, and landscape architecture.

Students in each of these programs, working in physical proximity to one another, 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 over 650 students and has full-time teaching staff of over sixty, supplemented by visiting teachers, part-time lecturers, and assistants. Teachers and students mix together freely and much instruction and criticism is on an individual basis.

The College's courses are parts of professional curricula with fundamental subjects given within the College by a faculty 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 evident in the form of the curriculum, the methods of teaching, and the extra-curricular life of teachers and students.

Architecture

The field of architecture is becoming increasingly complex as architects assume a wider range of responsibility toward problems of the built environment. In this profession, the architect has the opportunity to make contributions to the major human efforts of our time towards improving the habitat of people. These efforts will benefit from the particular vision and innovative ability of the architect, who will, however, not be the exclusive designer of the environment, but will perform the task within a total framework and in close relationship with other professionals. 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 architec-



ture 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 of focus from the construction of individual buildings to inclusion of 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 that characterize its distinct role in giving concrete three-dimensional form to the physical environment. The nature of the field calls for an undergraduate education that 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 that may become a basis for specialized studies at the graduate level.

Faculty Interests

Peter Cohen: architectural design, housing in developing countries, design aspects of transportation
 Ralph Crump: environmental controls
 W. Willson Cummer: architectural history (Classic and pre-Classic), archaeology
 Michael Dennis: architectural design, urban design
 Werner Goehner: architectural design, urban design
 Donald Greenberg: architectural technology, structural analysis and design, suspension structures, computer graphics, model analysis
 Keith Grey: architectural design, planning design, community service design
 Martin Harms: architectural design, urban design, theory, design methods
 George Hascup: architectural design, visual communications systems, simulation
 Lee Hodgden: architectural design, theory and criticism
 Stephen Jacobs: architectural history, American architecture, architectural preservation planning
 Alexander Kira: human engineering and psychological aspects of architecture
 Urszula Lesnikowski: architectural design
 Wojciech Lesnikowski: architectural design, housing, building systems
 Jacqueline Livingston: photography
 James Loveall: architectural design, professional practice
 Robert MacDougall: anthropological methods applied to architecture
 Archie Mackenzie: architectural design methods, urban design
 John Miller: architectural design, professional practice
 Leonard Mirin: landscape architectural history, urban landscape design

Christian Otto: architectural history (baroque, renaissance, modern)
 Charles Pearman: architectural design, urban design, American housing, building systems
 Henry Richardson: architectural design, urban design, housing in developing countries
 Colin Rowe: architectural history, renaissance and modern architecture, urban design, architectural criticism, contemporary European and American architecture
 Francis Saul: structural steel and reinforced concrete building design, timber, foundation, structural plastics and blast-resistant design
 Mario Schack: architectural design, urban design, professional practice
 John Shaw: architectural design, urban design, regional design
 David Simons: computer applications, architectural design
 Stuart Stein: urban design, site planning, urban renewal, housing
 O. M. Ungers: architectural design, urban design, regional design, housing
 J. Alan Wells: architectural design, urban design, housing, building systems

Professional Degree Program

The first professional degree in architecture is the Bachelor of Architecture. This degree counts towards the professional registration requirements established by the various states and the National Council of Architectural Registration Boards. The professional program is normally five years in length and is designed particularly 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 foundation 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 or her 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's work toward the Bachelor of Architecture degree to one of the graduate programs offered in the department, with the possibility of completing the requirements for the master's degree in a minimum of one additional year.

8 Professional Degree Program

Curriculum

First Year

Fall Term

101 Design I	Credits	3
131 Introduction to Architecture	2	
141 History of Architecture	3	
151 Design Fundamentals I	2	
191 Analytical Drawing I	2	
Elective (out of College)	3	
	15	

Spring Term

102 Design II	3	
142 History of Architecture	3	
152 Design Fundamentals II	2	
162 Introduction to Social Science in Design	2	
192 Analytical Drawing II	2	
Elective (out of College)	3	
	15	

Second Year

Fall Term

201 Design III	4	
221 Mathematical Techniques	3	
231 Architectural Elements and Principles	3	
261 Introduction to Environmental Science	2	
Elective (in College)	3	
Elective (out of College)	3	
	18	

Spring Term

202 Design IV	Credits	4
222 Structural Concepts	4	
232 Design Methods and Programming	3	
262 Building Technology, Materials, and Methods	3	
Elective (out of College)	3	
	17	

Third Year

Fall Term

301 Design V	6	
321 Structural Systems I	3	
361 Environmental Controls I	2	
Elective (in department)	3	
Elective (out of College)	3	
	18	

Spring Term

302 Design VI	6	
322 Structural Systems II	3	
362 Environmental Controls II	3	
Elective (in department)	3	
Elective (out of College)	3	
	17	

Fourth Year

Fall Term

401 Design VII	6	
481 Professional Practice	2	
Elective (in department)	3	

Elective (in College)	3
Elective (out of College)	3

Spring Term

402 Design VIII	6
482 Professional Practice	2
Elective (in department)	3
Elective (in or out of College)	3
Elective (out of College)	3

Fifth Year

Fall Term

501 Design IX, 503 Design IX- Thesis I, or 601 Special Program	8
510 Thesis Introduction	2
630 Advanced Seminar in Architecture	1
Elective (in department)	3
Elective (out of College)	3

Spring Term

502 Design X- Thesis, 504 Design X- Thesis II, or 602 Special Program	8
631 Advanced Seminar in Architecture	1
Elective (in department)	3
Elective (in or out of College)	3
Elective (in or out of College)	3

Total credits

169

Elective Distribution Requirements

	Credits
In-department electives	18
In-College electives	6
In- or out-of-College electives	9
Out-of-College electives	27
Total electives	60

In-Department Elective Distribution Requirements

	Credits
History of architecture courses	6
Principles, theories, and methods and nonsequence design courses	6
Design communications or computer graphics course	3
Architectural science course	3

In-College Elective Distribution Requirements

	Credits
Art course	3
Planning course	3

Out-of-College Elective Distribution Requirements

	Credits
Mathematics, physics, or biological science course	3
Humanities courses	6
Social science courses	6

Degree Option

After the completion of the first four years of credit requirements, the student can opt to receive the non-

professional degree Bachelor of Fine Arts (B.F.A.) in architecture or Bachelor of Science (B.S.) in urban planning and development of policy planning and regional analysis.

Transfer Students

While the professional degree 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 one or 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.

Students who transfer into the undergraduate professional degree program in architecture must complete a minimum of four terms in residence at Cornell and a minimum of 70 credits at the University, of which 35 credits must be taken in the Department of Architecture, including four terms of design.

Nonprofessional Alternative Programs

The first two years of the professional program are considered a basic introduction 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 licensed practicing architect. A student choosing an undergraduate nonprofessional major should apply in writing by February 1 in the second year to the department chairperson. The student will be interviewed and informed about acceptance by March 1.

Programs developing major concentrations in the third and fourth years leading to the nonprofessional Bachelor of Fine Arts degree after the fourth year include history of architecture and urban development and design communications;* and to the Bachelor of Science degree in urban planning and development and policy planning and regional analysis. A student attaining either of these degrees can either terminate studies or apply to a graduate program in the area of concentration.

History of Architecture and Urban Development

The major in history of architecture and urban development is intended for undergraduate students interested in historical studies of architecture and planning offered in the context of a professional school. The program benefits from a tradition of pioneer work in the history of architecture and urban development that has grown at Cornell over the last thirty years. Special features of the new major are the availability of work in preservation planning and the architectural aspects of archaeology. Nine members of the College faculty offer courses appropriate for this major.

*Program temporarily suspended.

Admission to the Major

Architectural history and urban development may be elected as a major subject if a student has completed Architecture 141 and 142 with a grade of B or better. Others may petition for admission to the major.

Requirements

To satisfy the major subject requirement, a minimum of forty credits of history course work must be completed with a grade of C or better. Of these forty credits, twenty-six must be in architectural history and urban development with eight of these twenty-six credits obtained in courses above the intermediate level. In addition, eight credits must be obtained in related fields, such as history of art; archaeology; intellectual, cultural, or political history; and history of science.

Majors will be expected to meet the language requirement in the manner specified for students enrolled in the College of Arts and Sciences.

Honors Program

Students wishing to enroll in the honors program must indicate this intention in writing before the end of their junior year and be accepted for the program by the history of architecture faculty. Minimum requirements for admission to candidacy for honors are:

1. a cumulative average of B- or better in all courses;
2. a cumulative average of B or better in all history of architecture and urban development courses.

Honors candidates will take a four-credit research course in the fall of their senior year. In the spring there will be a four-credit session during which they will prepare and defend an architectural history presentation or demonstration, or a paper approximately fifty pages long.

Curriculum

<i>Prerequisite:</i> first two years of Bachelor of Architecture curriculum	<i>Credits</i> 70
<i>Third Year, Fall</i>	
Fine art elective	3
Related field courses	4
History of architecture (intermediate level) or history of urban development	4
Electives	4
	15
<i>Third Year, Spring</i>	
Related field courses	4
History of architecture (intermediate level) or history of urban development	4
Electives	7
	15
<i>Fourth Year, Fall</i>	
History of architecture (advanced level) or history of urban development	4
Honors or history related subject	4
Electives	8
	16

10 Nonprofessional Alternative Programs

Fourth Year, Spring

History of architecture (advanced level) or history of urban development	4
Honors or history related subject	4
Electives	8
	—
	16
Total	132

Design Communication*

The Design Communication Program has been formulated to prepare students with the skills and abilities to deal effectively with the complex possibilities presented by the new technologies in media communication forms. The program is directed toward an applied problem-solving approach to the design process in general, and to architecture in particular.

Admission to the Major

Entrance to the Design Communication B.F.A. Degree Program is open to students who have successfully completed the first two years of the architecture program, and who have a grade of B or better in Architecture 151 and 152. Others may petition for admission to the major.

Requirements

A minimum of forty-two credits of course work must be completed in the major field beyond the basic sequence courses with a grade of C or better. Twenty-four of the forty-two credits must be in design communication. The remaining eighteen credits must be obtained in related fields, such as fine arts, mass communication, perceptual psychology, lighting and acoustics, and the performing arts.

Curriculum

<i>Prerequisite:</i> first two years of Bachelor of Architecture curriculum	<i>Credits</i> 70
<i>Third Year, Fall</i>	
Design communication courses, 300 level	6
Related field courses	6
Electives	3
	—
	15
<i>Third Year, Spring</i>	
Design communication courses, 300 level	6
Related field courses	6
Electives	3
	—
	15
<i>Fourth Year, Fall</i>	
Design communication courses, 400 level	6
Related field courses	3
Electives	7
	—
	16
<i>Fourth Year, Spring</i>	
Design communication courses, 400 level	3

*Program temporarily suspended.

Thesis project in design communication	6
Electives	7
	—
Total	132

City and Regional Planning

The intention of this program is to offer students completing their first two years in the undergraduate architecture program the opportunity to major in planning during their third and fourth undergraduate years. It is not the goal of this undergraduate major program to train students to be professional urban planners; the master's program in planning is organized for that purpose. The major is organized primarily to offer students coming from an architectural program an opportunity to redirect their academic training toward the understanding of urban and regional problems and their potential solutions.

In general, this major will open up new directions for students for academic or professional activity that can be pursued in greater depth in a variety of graduate programs either at Cornell or elsewhere.

Students in the undergraduate planning program may study in any one of several formal options or may work out a special program with a faculty adviser. Examples of special programs are exhibited below and further elaboration follows later in the catalog, in the discussion of the graduate program in city and regional planning. Students completing the program should be well prepared to undertake graduate work in a variety of fields, such as urban design, landscape architecture, city and regional planning, public policy, or a number of the social science fields. They should also be well prepared to enter the field of planning at various levels of government as policy planning becomes more and more an integral part of a wide range of public organizations whose programs attempt to address the critical social problems of our time.

Admissions to Major

Students intending to take the undergraduate major in city and regional planning leading to the Bachelor of Science degree must indicate their election to do so by the end of the spring term of their second year. They must be in good standing and approved by the CRP Committee on Undergraduate Majors.

Requirements and Programs of Study

The major requires a minimum of 30 credits of course work in the Department of City and Regional Planning out of a total of 132 credits required for the degree. Depending upon the option chosen, the core is comprised of from 18 to 24 credits. Examples of possible programs follow.

Undergraduate Student with Planning Major Interested in Social Planning:

Introduction to Urban and Regional Theory
Introduction to Social Policy Planning
Theories and Strategies of Social Change
Introduction to Planning Theory
Social Science electives



12 Graduate Programs

Undergraduate Student with Planning Major Interested in Urban Environmental Policy Planning:

Introduction to Urban and Regional Theory
The Public Economy of Urban Areas
Regional Economic Development
Introduction to Urban Development Planning
Engineering electives

Undergraduate Student with Planning Major Interested in Community Development Planning:

Introduction to Urban and Regional Theory
Planning Analysis
Regional Economic Development
Theories and Strategies of Social Change
Field Studies in Planning
Social Science electives

Undergraduate Student with Planning Major Interested in Urban Planning History:

Introduction to Urban Development Planning
Design and Conservation
Seminar in American Urban History
Electives

Undergraduate Student with Planning Major Interested in the Urban Development Process:

Introduction to Urban Development Planning
Urban Land-Use Planning
Suburbanization and Metropolitan America
Electives

A number of other independent programs can be developed.

Departmental Electives and Independent Study

A number of courses are specifically designated for undergraduates. Undergraduate students having the necessary prerequisites may be admitted, with the consent of the instructor, to the more advanced courses. In addition, a number of independent work courses are available for students interested in pursuing subjects of special interest to them.

Fieldwork

Students are encouraged to take fieldwork problems providing them with experience in dealing with the problems of Upstate communities. Credit can be awarded.

During the three-month summer period between the third and fourth years, the student is encouraged to gain the experience of an internship in city and regional planning. The field placement is generally in a planning agency or group and may be supervised by a faculty member. Credit may be awarded, if circumstances warrant.

Curriculum

The department releases each year a schedule of courses, comprised of offerings from the list in the back of this catalog. Suggested undergraduate curricula vary from year to year, and consultation with the most recent departmental listing is necessary.

Graduate Programs

The programs in which graduate study may be pursued in the Department of Architecture are architectural design, urban design, and regional design, all leading to the Master of Architecture (M.Arch.) degree; architectural science leading to the Master of Science degree; preservation planning leading to the Master of Arts degree; architectural history and history of urban development leading to the Master of Arts and Ph.D. degrees. There is also a joint program, conducted by the Departments of Architecture and City and Regional Planning which leads to both the Master of Architecture and the Master of Regional Planning degrees. A joint program sponsored by the Colleges of Architecture, Art, and Planning and Agriculture and Life Sciences leads to the Master of Landscape Architecture (M.L.A.) degree.

Graduate Program in Design

Students who have satisfactorily completed all requirements for an undergraduate professional qualifying degree in architecture (B.Arch.) or its equivalent at an approved institution may be admitted as candidates for the degree of Master of Architecture. Holders of nonprofessional degrees in architectural or environmental studies should apply as transfers into the undergraduate program leading to the first professional degree (B.Arch.)

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 an elective program to reinforce and supplement the studio work. A minimum of sixty credits 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 credits 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 credits in planning course work. Candidates for admission should indicate their preferred area of major concentration on the application.

The normal length of time required to complete the program is four terms. The minimum number of residence terms is two, regardless of previous graduate work. Students acquiring the B. Arch. at Cornell are also required to be registered in the Graduate School for at least two terms. For those pursuing the joint degree program in architecture and planning a minimum of two terms of residence is required in the graduate program in architecture.

The programs leading to the Master of Architecture degrees are administered by Program Concentration Committees, consisting of the graduate faculty representative and those faculty offering work in the area of concentration. Each graduate student selects a Special Committee of advisers. 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 faculty 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.

Graduate Program in 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 social science, are likely candidates for this program. The program is extremely flexible and can be arranged to meet the specific needs and objectives of the individual students and to build on their prior technical preparation and competence.

The objectives of the graduate program in architectural science are the following:

1. To afford an opportunity for students of architecture to expand their creative design potential by increasing their knowledge and understanding of environmental science, computer science, or 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 or her 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, mathematics, housing and environmental analysis, anthropology, and sociology.

Cornell facilities include a well-equipped state-of-the-art computer graphics laboratory and immediate access to the Cornell Computing Center, IBM 370/168.

Graduate Programs in Architectural History, History of Urban Development, and Preservation Planning

Students interested in programs leading to the degree of Master of Arts or Doctor of Philosophy offered by the Field of History of Architecture and Urban Development enroll in the Graduate School of the University. They may elect history of architecture or history of urban development as major or minor subjects. Preservation planning is offered as a minor subject for the Ph.D. degree and as a major subject for the M.A. degree. Normally, applicants have undertaken undergraduate work emphasizing architecture, history of art, or related studies.

The graduate program in architectural history and history of urban development is concerned with methods of scholarship and research, as well as the record of development of architecture from the earliest times to the present day. Though a specialized focus of study will be necessary, all students are required to become acquainted with the history and scholarship associated with the architectural traditions of the West. A special feature of the program is the opportunity for the student to prepare for research and teaching of the history of architecture in the context of the professional school of architecture.

Graduate work consists of seminars and courses in this and other departments in combination with independent study under faculty direction. For the degree of Master of Arts in architectural history or history of urban development candidates must demonstrate a reading knowledge of one approved foreign language, pass examinations in their major and minor subjects, and submit a satisfactory 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. For the degree of Master of Arts in Historic Preservation Planning a minimum of fifty-two credits are required. Seventeen credits must be completed in "core" courses and twelve in courses chosen to constitute a minor field of concentration. A thesis is required.

The Fine Arts Library provides a focus and resources for graduate study and preparation of theses.

Graduate Program in Landscape Architecture

The Graduate Program in Landscape Architecture leading to the Master of Landscape Architecture (M.L.A.) degree is administered jointly by the College of Architecture, Art, and Planning and by the College of Agriculture and Life Sciences. A full description of the program may be found on page 21.

Summer Term in Architecture

The summer term offers students the opportunity of a concentrated period of design work. Design is offered at both undergraduate and graduate levels; the term is six to eight weeks in duration.

Undergraduate design sequence courses are offered at second- through fifth-year levels in Ithaca. Normally, there is also a design program abroad for fourth- and fifth-year students.

Registration is limited to students in good 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.

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

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, photography, and the graphic arts afforded in the last three years. In the third semester, students take either painting, sculpture, or photography and a required course in printmaking. Beginning with the fourth term, students concentrate on painting, sculpture, photography, 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 and 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 the 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. However, the intimate relationships between 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.

The department discourages the concept of accelerated graduation. However, a student may petition for consideration of early graduation upon the following terms and conditions: (1) The petition must be submitted to the faculty before preregistration in the spring semester of the student's junior year; and (2) the student must have a cumulative average that places him or her in the first quarter of the class.

A candidate for the B.F.A. degree who wishes also to earn an A.B. degree from the College of Arts and Sciences can arrange to do so. This decision should be made early in the candidate's career (no later than the third semester) so that he or she can petition to be registered in both Colleges simultaneously, and an adviser in the College of Arts and Sciences can supply needed guidance. Those students who are interested primarily 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 take studio courses as electives in the Department of Art in the College of Architecture, Art, and Planning.

Curriculum

First Year

<i>Fall Term</i>	<i>Credits</i>
111 Introductory Art Seminar	1
151 Introductory Drawing	3
110 Color, Form, and Space	3
B.F.A. students must take one and may take both of the following courses:	
121 Introductory Painting	3
141 Introductory Sculpture	3
Out-of-college electives	0-3
	<hr/> 13-16

Spring Term

152 Introductory Drawing	3
B.F.A. students must take two of the following three courses:	
122 Introductory Painting	3
142 Introductory Sculpture	3
161 Beginning Photography	3
Out-of-college electives	4 or 7
	<hr/> 13-16

Second Year

<i>Fall Term</i>	
251 Second-Year Drawing	3
131 or 132 Introductory Graphics (one term, fall or spring)	3
B.F.A. students must take two of the following three courses:	
221 Second-Year Painting	3
241 Second-Year Sculpture	3
162 Intermediate Photography	3
Electives	4 or 7
	<hr/> 13-16

Spring Term

252 Second-Year Drawing	3
131 or 132 Introductory Graphics (one term, fall or spring)	3
B.F.A. students must take two of the following three courses:	
222 Second-Year Painting	3
242 Second-Year Sculpture	3
262 Advanced Photography	3
Electives	4-7
	13-16

Third and Fourth Years

Students in the third and fourth years should plan their programs to complete twenty-eight credits in courses in one of the following studio areas: painting, sculpture, or graphics. Or, they should plan to complete twenty credits in each of two of the above areas. Students may also choose a course of study in photography up through the third-year level. Twelve additional credits in art history at the 200 level or higher or in architectural history must also be completed. Students are expected to take thirty-two credits in their third and fourth years respectively.

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

1. Of the minimum of 52 elective credits to be taken outside the Department of Art, four courses must be in English, history, or other humanities offered in the College of Arts and Sciences. Six credits in art history at the 200 level or higher or in architectural history must 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 credits to be taken within the Department of Art, the following courses must be completed in the first two years: 110 Color, Form, and Space; 151-152 Introductory Drawing; 251-252 Second-Year Drawing; at least two of the following sequences: 121-122 Introductory Painting, 141-142 Introductory Sculpture, 161 Beginning Photography and 162 Intermediate Photography; and either 131 or 132 Introductory Graphics.

The University requirement of four terms in physical education must be met.

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

Students who transfer into the undergraduate degree program in art must complete a minimum of four terms in residence at Cornell and a minimum of 60 credits at the University, of which 30 credits must be taken in the Department of Art, including four terms of studio work.

Graduate Study

A student who holds a bachelor's degree or its equivalent and has clearly demonstrated 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 credits; of this, from seven to ten credits will be assigned to studio work, two credits to Art 610 (Seminar in Art Criticism), and the remainder to courses outside the Department of Art. Students are required to take at least twelve credits 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 credits of courses in the history of art, taken either as graduate or undergraduate students.

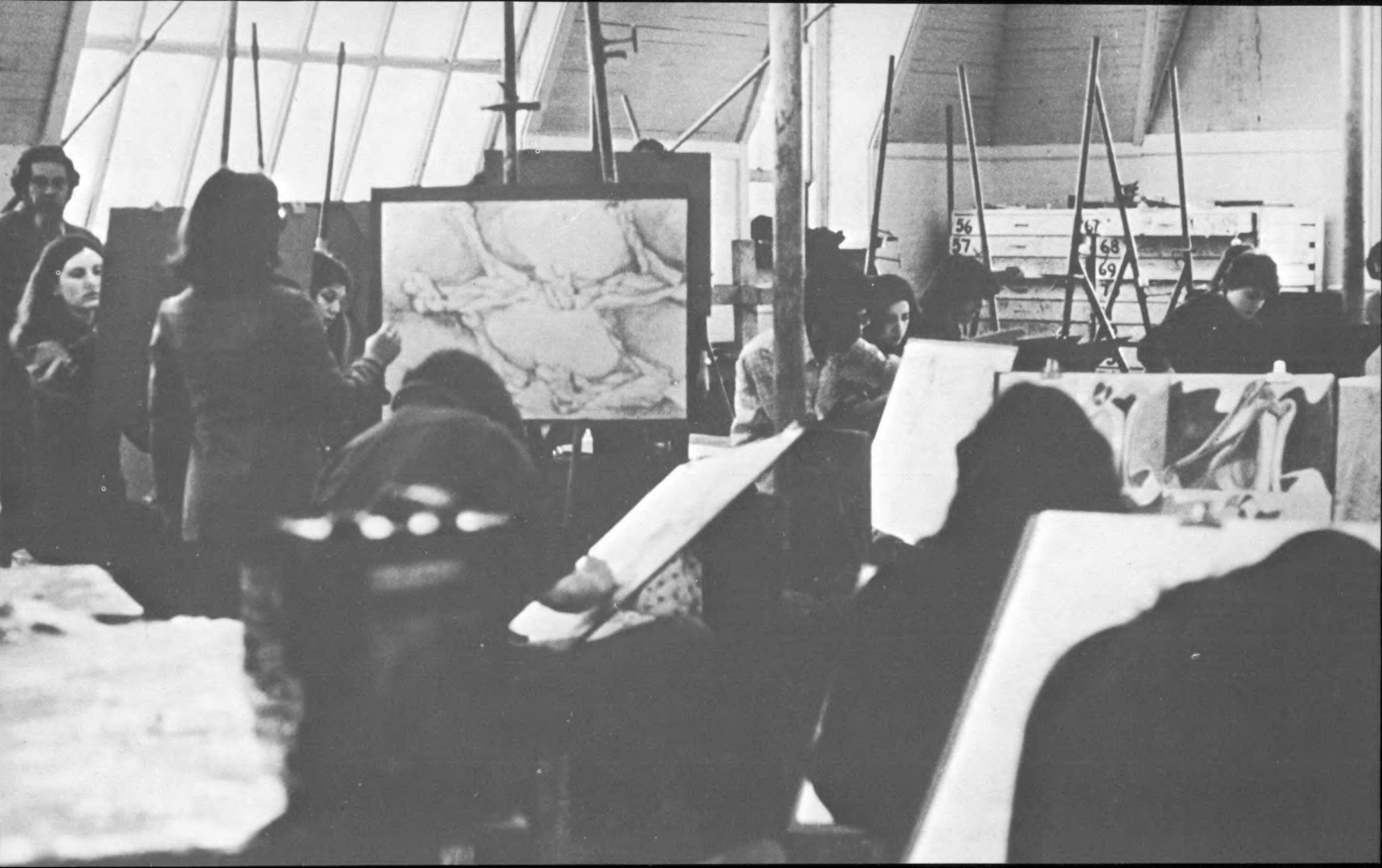
At the end of the third term of residence, the candidate is required to present a one-person exhibition of work done while in residence. The principal effort of the fourth term is a thesis consisting of creative work and, in addition, an essay dealing with a subject in the theory or history of the visual arts. An oral examination on these subjects normally 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 paintings. Original works 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 are allocated at the beginning of the school year. Assistantships are generally awarded to second-year students only. Transfer credit for work done elsewhere, or during the summer, is not acceptable.

City and Regional Planning**Objectives and Facilities**

Planning seeks to guide the development of the economic, social, natural, and built environments in order that people's needs and aspirations may be better satisfied. Most of the activities in the department focus on issues related to urban, regional, and social policy planning. Urban planning is concerned



primarily with the urban environment, the physical facilities as well as social and economic forces that affect this environment, and the processes of plan making and administration. Regional planning is concerned primarily with socioeconomic issues and functional planning at the regional level, the forces that generate economic growth and social development, and the ways in which resources can best be used in regional development. Social policy planning is concerned with the social decision processes involved in both city and regional planning.

The department as a whole is broadly concerned with public decision-making processes: the formation of public policies; the design and evaluation of public plans, programs, and projects; the development of institutions; and the creation of legislative and administrative implementation devices. This view of planning can be applied to a broad spectrum of activities, ranging from the more traditional aspects of city planning to the most recent developments in the field. It involves the use of appropriate theories and methodologies developed for the study of social, economic, spatial, and physical systems and the relationships among them. Within this broad framework, students have considerable flexibility in pursuing their own areas of interest. It is possible to develop programs of study that vary across a wide spectrum from those that have a very general approach to planning, to those with a much more specialized focus.

The programs of study in city and regional planning, which are primarily at the graduate level, have two major objectives: (1) professional education for participation in planning the social, economic, physical, and spatial development of urban areas and regions; and (2) more advanced specialized education for those who seek careers in teaching and research, as well as in policymaking positions. Study for the degree of Master of Regional Planning (M.R.P.) 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 and regional 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 and in research positions in government agencies, private organizations, and in professional practice. The degree Master of Professional Studies (International Development) is a one-year program designed for experienced professional planners with specific training needs or for others with needs for short-term planning education.

Students in planning are encouraged to take advantage of the resources in related programs at Cornell. A program of urban and regional research at the University is focused in the Program on Urban and Regional Studies as well as in the College of Architecture, Art, and Planning. The Center for Aerial Photographic Studies and the Center for Environmental Research also encourage research programs and provide assistance that enable the departments and individuals to focus their interests in these areas. Graduate programs in the College of Arts and Sciences, the College of Agriculture and Life Sciences,

the College of Human Ecology, the Graduate School of Business and Public Administration, the School of Civil and Environmental Engineering and the School of Operations Research and Industrial Engineering in the College of Engineering, the Law School, and the Department of Architecture offer opportunities for related and, in certain cases, 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, which contain the papers and records of many pioneering individuals and organizations in the profession, provide unique research resources.

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 the department. The standard requirements of the Graduate School for the selection of major and minor subjects do not apply to planning students at the master's level. Instead, prospective students are subject to the specific requirements of the department. These requirements are listed below.

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 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.

Candidates for the Ph.D. degree must complete a program of studies approved by a Special Committee composed of a chairperson representing the 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. Minors are possible in such subjects as aerial photographic studies, agricultural economics, anthropology, architectural history, comparative government, econometrics and economic statistics, economic development, economic theory, consumer economics and housing, environmental analysis and design, law, natural resources, conservation, opera-

tions research, the political process, political theory, psychology, public administration, research methodology, sociology, statistics, environmental and civil engineering, sanitary engineering, and transportation engineering, among others. In consultation with the chairperson of the Special Committee, the Ph.D. candidate will normally select two minor subjects that best complement the student's research interests in city and regional planning. Work for the Ph.D. is considered preparation for making creative contributions to the field. For that reason, substantial competence and knowledge of basic analytical and research methods are required. Candidates may fulfill this requirement by preparation previous to entrance or by course work at Cornell.

Master of Professional Studies in International Development (Regional Planning)

In conjunction with the graduate Field of International Studies, the Department of City and Regional Planning offers the M.P.S. (I.D.) degree, a one-year program either for experienced professional planners with specific training needs or for other mid-level professionals with needs for short-term planning education. The program is described in the department's brochure, *International Studies in Regional Planning*.

Information not found in this *Announcement* may be obtained by writing the Graduate Faculty Representative, City and Regional Planning, West Sibley Hall.

The Professional Program

The basic goal of the professional program is to provide graduate-level training essential for persons seeking careers primarily in the broad range of public agencies involved in planning, as well as with consultants and other private businesses. The approach in the professional program reflects a general view of planning that can also be applied to a wide range of functional areas, such as urban physical development and land use; health, welfare, education, manpower, and housing; environmental and recreation systems; urban systems analysis; nonmetropolitan development; and planning for regions in Third World nations, among others.

Students have considerable flexibility to develop programs of study that suit their interests and goals, whether specific or more general. Some current areas of specialization of interest to the faculty are noted below.

Curriculum and Requirements

The curriculum for the professional program has been designed to provide students with knowledge in planning and in related disciplines while permitting them to carry on in-depth studies in one or more areas of specialization. A limited number of foundation courses are required early in the two-year program (see below). These are designed to present a comprehensive view of the field and provide some basic knowledge and skills in planning. Students are expected to help design their own individualized programs of study in cooperation

with their faculty advisers and are encouraged to take courses not only in the department, but also, in order to broaden their education, in disciplines relevant to planning. The development of close working relationships between students and individual faculty members is encouraged.

A minimum of sixty credits of course work is required for the M.R.P. degree, including a thesis, project, or research paper. At least thirty of these credits must be taken in courses offered within the department. Ordinarily, two years of residence are necessary to complete the requirements for the degree.

Course Work

The first year for the M.R.P. degree usually includes the required distribution courses and elective courses. Students are expected to take at least one course in each of the three program areas in the department (see below for description of regional development planning, social policy planning, and urban development planning) as well as at least one course each in quantitative methods and in urban and regional theory. Second-year courses are generally electives chosen in the area of specialization. Electives may be taken in any area or in any department or program of the University. The selection of the electives must be made with the guidance of the student's adviser and should contribute to the development of a sound base for the student's future professional activities.

Independent Work Requirement

Candidates for the M.R.P. degree must demonstrate an ability to do independent work as professionals in planning. The nature of this independent effort will be planned by the student and his or her faculty adviser as a thesis, final project, or research paper. Independent work normally entails specialization in course offerings during the latter part of the two-year program, and students are encouraged to choose an adviser appropriate for such specialization early in their program of study.

The faculty of the department encourages students to integrate applied fieldwork and workshop experience with their thesis, project, or research paper. Opportunities for such study experience and for completing the independent work requirement exist within the framework of the department's course offerings.

Program Areas

For academic year 1977-78, the department is organized into three program areas: urban development planning, regional development planning, and social policy planning. A variety of specializations are subsumed within these programs. Students may elect to focus their work in one or more of these program areas or, with the consent of their faculty adviser, develop a special program of study.

Urban Development Planning

The program in UDP is concerned with urban planning, development, housing, renewal, the history of urban development, and many other related activities. Employment in these fields is primarily at the



municipal, metropolitan, county, regional, and state levels, with citizens' and neighborhood groups that require technical planning services, private consultants serving public agencies or private clients, and private organizations directly engaged in development work.

The major focus of the teaching, research, and community service programs is on the applied aspects of urban planning and development activities. The program is concerned to a great extent with the determinants of land use and arrangement of space within cities and regions—their planning, development, control, and management. Considerable attention also is given to economic, social, and political matters as they affect development and change of the urban environment.

Methodological skills appropriate to finding solutions for urban problems of this kind are an integral part of the program. Applied social services programs, as they relate to broader planning and development programs, are considered important, as is 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 program is primarily prescriptive, emphasizing case studies and fieldwork courses that are integrated with a broad range of academic courses, built upon a base of urban and planning theory. The student is offered a number of opportunities to work directly with real clients and real problems typical of those that face the practicing urban planner. Working together with faculty and fellow students, a student can learn his or her own strengths and weaknesses and also can develop an individual style of operation. Much of the work produced in fieldwork courses provides the basis for student term papers, reports, and thesis projects.

The special areas of strength within the urban planning and development program depend, to a great extent, upon the resident faculty. Across the breadth of the University, there are many course offerings and community service activities that are available to students to supplement the offerings of the department. However, to guide prospective students, the department considers that its greatest strengths within this program are in the following areas: urban planning history; historic area preservation; housing; urban development policies and programs; legal aspects of planning and urban development; land-use planning; planning design; ecological planning; planning politics and administration; institutional and campus planning. To summarize, the program focuses primarily on those aspects of planning that deal in a comprehensive way with improving the urban physical environment and with the action programs necessary to achieve that goal.

Social Policy Planning

Policy planning involves the analysis of values and choices that underlie public policy. Its goal is to help policymakers with limited resources choose among policy alternatives to reach the community's objectives. The structure and content of the program reflect the expanding scope and changing functions of the

planning profession. Quantitative and nonquantitative training are offered for students at the professional and advanced graduate levels who are interested in urban planning and social policy careers at the national and subnational levels of public and private activity. The program offers instruction and research in the socioeconomic, spatial, and political aspects of social systems and the policymaking process. The educational goal of social policy planning is to integrate and sharpen the perspective of the policy-related aspects of physical and social planning through the application of social theory, policy research methods, and social change strategies. The objective is to train planners and policy specialists whose work will link social scientists, government policymakers, and indigenous groups interested in effective public service.

Regional Development Planning

Regional development planning is the study of subnational social and economic systems at the regional, community, and group levels and the ways in which they relate to larger socioeconomic systems. The program studies the growth and development of cities and regions, mainly through the use of social, economic, and spatial analysis and related methodologies. Currently, there are three components of the program: (1) A specialization in international aspects of urban and regional planning exists in order to meet the research and training needs of professionals who will work on planning problems in developing countries. The objectives are to offer training for students and planners from both low-income and industrialized countries, to enable them to work in research, planning, and administration of local and regional activities; to exchange information and ideas about new techniques of planning and to encourage, through comparative studies, their modification for application in developing countries; to support research in an interdisciplinary environment; and to develop materials for training and research for programs abroad. (2) There are a wide variety of planning problems associated with nonmetropolitan areas. One is, for example, the identification of the ways that the poor of the nonmetropolitan United States may find their way into more prosperous, less dependent situations with more control over their own futures. The study of social and political institutions in nonmetropolitan areas is emphasized because this appears to be the most promising approach for the study of rural problems. Problems of regional economic development and decline, an issue emerging in national politics, also are dealt with. (3) Urban and environmental systems planning is concerned with the application of systems analysis techniques and computers to the solution of appropriate urban and regional problems. The role of such analytical methods and of information systems in planning and policy formulations and analysis are also of interest.

Faculty Interests

- Richard S. Booth: land-use law, regional land-use planning, environmental law, critical area preservation
- V. Wesley Boyar: professional fieldwork, local government management and finance, water quality management planning, economic development

Paul Brandford: environmental health planning, epidemiology, quantitative methods, health systems planning and analysis

Pierre Clavel: planning theory, administration, regional development

Stan Czamanski: economic analysis for planning, including urban growth models; regional social accounts; regional applications of input-output analysis; location theory; housing economics; urban land economics

Nancy Lynn Gilgosh: sociology of the community, mental health planning, social services planning

William Goldsmith: regional development planning and administration, economic analysis, urban and regional planning in developing countries

Keith Grey: urban design, site planning, land-use planning

Cary Hershey: social policy planning, social change, administrative theory, manpower, education and welfare programs

Walter Isard: regional science

Barclay G. Jones: urban and regional quantitative analysis, urbanization theory, planning theory, environmental health planning, historic preservation planning

David B. Lewis: urban and regional planning in developing countries, technology transfer

Dorothy Nelkin: impact of science and technology on urban society, environmental policy development

Kermit C. Parsons: comprehensive land-use planning, new community planning, university planning

John W. Reps: land-use regulation, planning administration, comparative planning, history of city planning in the United States

Sidney Saltzman: quantitative methods and systems analysis in planning, computer applications and information processing systems

Richard Schramm: urban fiscal analysis, local governmental financial decision making and planning, economic development, alternative fiscal systems for development, worker-managed enterprises and community control, controlling corporations

Stuart W. Stein: planning and urban design within the context of comprehensive planning, housing and renewal, preservation of historic districts, enhancement of the visual assets of the city, land-use planning, urban planning practice

Ian R. Stewart: urban housing, renewal and development policies and programs, urban politics, new town and suburban development policies and programs, American urban history (On leave 1977-78.)

D. F. Williams: housing, urban public sector, analysis, social policy planning, planning theory

graduate work may apply for advanced standing or direct admission to doctoral study.

All applicants resident in the United States during the year preceding matriculation must submit scores from the Graduate Record Examinations Aptitude Test taken within the previous two years. Applicants are urged to take the tests as early as possible, preferably in October. Upon request, the department may accept scores from the Law School Aptitude Tests (LSAT) in place of GRE test scores.

For further information write to the Graduate Faculty Representative, City and Regional Planning.

Joint Programs

Master of Regional Planning and J.D.

This program enables students to earn both a Master of Regional Planning and a J.D. degree in four years. Students should apply to both programs for admission, indicating their interest in the joint program. Students who successfully complete their first year in the Law School may then elect one course each semester in the College of Architecture, Art, and Planning. Students who continue to maintain the quality of their work in the Law School and who demonstrate an aptitude for planning will, at the end of the second year, be guaranteed a place in the College of Architecture, Art, and Planning. Upon successful completion of the requirements for a J.D. degree, these students will spend a fourth year at the College of Architecture, Art, and Planning to complete the requirements for an M.R.P. degree.

Students will be required to select certain Law School courses that have a direct bearing on planning. The proper sequence of introductory planning courses will be announced each year. These requirements will be fixed by a joint faculty committee representing both the Law School and the College of Architecture, Art, and Planning.

Landscape Architecture

The department cooperates in the Program in Landscape Architecture, which allows students the opportunity to benefit from the growing potential of the landscape and large-scale environmental design field because of its close integration with the city and regional planning department's program. Students interested specifically in pursuing a graduate-level program in landscape architecture should apply for admission directly to that program by writing to the Landscape Architecture Program, College of Architecture, Art, and Planning.

Landscape Architecture

Landscape architecture is the design profession concerned with the analysis, physical planning, and design of the outdoor environment. Through a comprehensive understanding of natural systems capabilities, land use, human behavior, and site design and construction principles, the landscape architect works to optimize the utility and form of outdoor space while minimizing environmental impact.

Admissions

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 may 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 may be made at any time after the second semester of work. Applicants with previous

In the Colleges of Architecture, Art, and Planning, and Agriculture and Life Sciences, the Landscape Architecture Program offers three professional degree alternatives: a two-year graduate program leading to a Master of Landscape Architecture degree, a three-year graduate program leading to a Master of Landscape Architecture degree, and a four-year undergraduate program leading to a Bachelor of Science degree (from the College of Agriculture and Life Sciences).

Two-Year Graduate Program

The two-year graduate program serves to broaden and enrich undergraduate education in design by providing an expanded educational experience to those who are technically skilled. Applicants are therefore expected to hold a bachelor's degree in architecture, landscape architecture, or environmental design from a recognized institution.

The objectives of the two-year program are to permit students to conduct research in the multidisciplinary areas relating to landscape architecture, and to provide advanced education and training to individuals who decide, upon graduation, to teach, to practice, or to conduct applied research in landscape architecture. To further these objectives, students are permitted considerable flexibility in establishing programs which take full advantage of the teaching and research resources of the University.

Three-Year Graduate Program

Students with bachelor's degrees in areas other than architecture, landscape architecture, or environmental design may enroll in the three-year graduate program. Through an initial curriculum sequence intended to develop basic landscape architecture skills and concepts, the three-year program provides opportunities for students from diverse educational backgrounds to become proficient in landscape design, site construction, graphic communication, plant materials, and other related subject areas necessary to enter the profession fully qualified at the master's level. In order to provide advanced education and training for those who decide to conduct applied research, to practice, or to teach in landscape architecture, students are also encouraged to pursue multidisciplinary studies based upon an individualized curriculum developed under the guidance of an adviser in the Field of Landscape Architecture.

Admission

Applications should include a record of undergraduate academic performance, letters of recommendation, a statement describing the applicant's background and objectives, and any examples of work which may illustrate the applicant's potential for achievement at the graduate level. Graduate Record Examination scores are desirable but not required. For further information prospective students should write to the Graduate Faculty Representative, Landscape Architecture, Cornell University, Sibley Hall, Ithaca, New York 14853. (Undergraduate applications to the Landscape Architecture Program should

be directed to the College of Agriculture and Life Sciences.)

Curriculum and Requirements

Two-Year Program

For students enrolled in the two-year program, sixty credits constitutes the course work requirement. Two academic years constitutes the minimum residence requirement. A student may petition the Graduate School for a maximum of one semester's advanced standing based upon previous education or experience.

The core courses include 481, Contemporary Issues in Landscape Architecture; and 582 and 681, Landscape Planning and Design Workshop. Additional professional landscape courses may be required for students with bachelor's degrees in architecture or environmental design. Electives may include courses in statistics, quantitative methods, landscape construction, landscape history, plant materials, and design, and will vary among individual students depending upon their educational backgrounds and interests.

Three-Year Program

Ninety credits, including satisfactory completion of the following core curriculum courses, fulfills the course work requirement of the three-year M.L.A. program:

<i>Course Area</i>	<i>Credits</i>
Studio-design	25
Site construction	8
Plant materials/natural systems	9
Visual communications	6
History of landscape architecture	4
Contemporary issues in landscape architecture	1
Professional practice	2

Two-year and three-year M.L.A. program students are required to choose a minor area of concentration. This consists of a minimum of fifteen credits of course work and may be chosen from any of the relevant fields in the Graduate School, or from subject areas such as the ecologic, economic, social, historical, or legal determinants of landscape architectural design.

In addition to satisfactory completion of course work, requirements for the M.L.A. degree include an approved summer internship and completion of a thesis or final project.

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 actively to support equality of educational opportunity. No student shall be denied admission to the University or be discriminated against otherwise because of race, color, creed, religion, national or ethnic origin, or sex.

The University does not discriminate against qualified handicapped persons in its admissions or recruitment activities.

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 originally entered.

A maximum of ninety 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 entire secondary school record, the recommendations from the school, and either the Scholastic Aptitude Test of the College Entrance Examination Board (SAT) or the American College Testing Program (ACT). Transfer students are normally accepted for admission only in September.

The intangible, but important, factors that 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, Cornell University, 410 Thurston Avenue, Ithaca, New York 14853, 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 who is able to do so, should plan to come to Ithaca during the fall term preceding the year for which he or she 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 Admission Secretary, College of Architecture, Art, and Planning, West Sibley Hall, Ithaca, New York 14853. For those who cannot come to Ithaca, interviews with alumni of the College can be arranged in some areas through the admissions secretary.

Requirements

All candidates for admission to the College must take the Scholastic Aptitude Test of the College Entrance Examination Board or submit American College Testing Program scores. 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 already begun, the College advises the student 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. Candidates for admission are advised to read professional literature, visit professional offices, talk with students of architecture or recent graduates, and otherwise inform themselves 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* should present sixteen units, 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. Candidates for admission are advised to read art criticism and art history, to visit museums and galleries, and to otherwise inform themselves 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. Prospective students who live outside the radius of the Boston-



New York-Ithaca areas and cannot travel for personal interviews may write to the Department of Art to arrange for an interview with a Cornell graduate who lives in the prospective student's part of the country and in addition send to the Department of Art one unmounted 9" x 12" self-portrait in pencil, exactly ten selective slides of their work, and a brief statement of professional interest and purpose.

Transfer Students

A student who has already attended another institution of collegiate rank is admitted at the beginning of the fall term. Transfer applications are available from the Office of Admissions, 410 Thurston Avenue, Ithaca, New York 14853. The applicant is required to meet all entrance requirements and to comply with the rules governing admission. In addition, the applicant should file with the Office of Admissions, an official transcript of record of work at the institution already attended, together with a certificate of honorable dismissal. The applicant should be prepared to send, if requested, a catalog of that institution, and marking the courses 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, Master of Regional Planning and Master of Landscape Architecture 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 14853 as follows: Candidates for the degree of Master of Architecture should write to the Chairperson, Department of Architecture, Sibley Hall; candidates for the degree of Master of Fine Arts should write to the Chairperson, Department of Art, Franklin Hall; candidates for the degree of Master of Regional Planning should write to the Chairperson, Department of City and Regional Planning. Candidates for the degree Master of Landscape Architecture should write to the Program Coordinator for Landscape Architecture, Sibley Hall.

Second, academic programs leading to the degrees of Master of Science (architectural sciences), Master of Arts (history of architecture and urban development, preservation planning), and Doctor of Philosophy (architectural history, city and regional planning) are formally under the jurisdiction of the dean of the Graduate School. Candidates for admission should apply for the necessary forms to the Graduate School, Sage Graduate Center, Cornell University, Ithaca, New York 14853, sending a copy of the letter to the appropriate department chairperson 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, except in the Field of City and Regional Planning where applications will be received until March 15. However, in all graduate programs, applications should be completed by February 1 in order to be considered for awards of fellowships, scholarships, and other financial aids. 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 \$25 non-refundable 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, or the Michigan English Language Test by arrangement with the English Language Institute, University of Michigan, Ann Arbor, Michigan 48104. 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 be made contingent upon evidence of improved command of English.

All applicants for admission to the programs in history of architecture and urban development, 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. Applicants must give evidence of ability to do creditable work in the

College, and their applications for admission must be recommended by the department in which they propose to do the main part of their work. They must file applications with the Office of Admission, 410 Thurston Avenue.

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

Special Opportunity Programs

Cornell University administers a variety of special opportunity programs designed to provide financial assistance and other forms of assistance to low-income, minority students and others meeting program guidelines. Special programs exist to aid in increasing representation of students from minority groups present in New York State who historically have been underrepresented in higher education. For details, prospective students should consult the information guide which accompanies each undergraduate application or will be sent upon request by the Office of Admissions, Cornell University, 410 Thurston Avenue, Ithaca, New York 14853.

Thomas' Lectures

The Preston H. Thomas Memorial Lecture Series, made possible through an endowment provided by a generous gift from Mr. and Mrs. Leonard B. Thomas in memory of their son, Preston H. Thomas, Class of '75, makes possible outstanding lectures in the field of architecture and related areas each year.

Financial Aid

Undergraduate Scholarships

A financial aid application is included with each application for admission. It is to be completed by each candidate who wishes to be considered for financial assistance. It will be necessary to submit a Parents' Confidential Statement (PCS) or a Financial Aid Form (FAF), obtainable from secondary school guidance offices or the Cornell Office of Financial Aid. The statement should be sent to the College Scholarship Service, Princeton, New Jersey 08540, by January 1, if possible, to allow for processing time. Later submission will jeopardize the possibility of being awarded assistance.

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 \$80,000 that may be awarded to undergraduate students, including entering students, in architecture and art.

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

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. Dowsell 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. Dowsell 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 David Bean Scholarship was established in 1972 by Mr. and Mrs. Robert C. Bean in memory of their son David R. Bean '71. The sum of \$1800 is to be awarded to a student in art who wishes to spend the junior spring semester working in Europe.

The Charles A. Holcomb Memorial Scholarship of \$200 was established in 1963 by Mrs. Holcomb in memory of her husband, who received his Bachelor of Architecture 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.A. in architecture '95.

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

The George Fraser Awards. Established in 1968 for the benefit of one or more upperclass or graduate students who, in the opinion of the faculty, have done

outstanding work and who preferably are in need of financial assistance.

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 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 \$400 in a special problem competition in second-year design. The fund established in 1927 was the gift of Mrs. M. Z. Baird.

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 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 in one of the architecture graduate programs in architecture at Cornell.

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 the 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, 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, 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 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, Bachelor of Architecture, 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 academic work or who, by qualities of personality or leadership, has significantly contributed to the intellectual advancement of fellow students.

The Michael Rapuano Memorial Award was established in 1976. It is in the form of a bronze medal and nominal monetary gift for a student graduating with either an undergraduate or graduate degree in architecture, landscape architecture, painting, sculpture, or planning who has performed work in any of these fields that is judged to be most outstanding as characterized by "distinction in design."

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 Fellowship

The Robert James Eidlitz Fellowship, the gift of Sadie Boulton Eidlitz, is available to persons who hold degrees 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, approximately \$4,000 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 from \$1500 to \$3500 plus tuition. 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 assistantships 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. Full teaching assistantships carry a stipend of \$3300 plus tuition.

The Department of City and Regional Planning awards a number of research assistantships in planning and for study in the M.R.P. program.

Prospective graduate students are reminded that there are a number of private agencies and foundations that 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 numerous scholarships and fellowships, many of them for study in the United States, by citizens of other countries.

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 \$2,000 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.

The tuition charge for both undergraduate and graduate students in the College of Architecture, Art, and Planning is \$4,400 for the 1977-78 academic year. In addition, a nonrefundable fee of \$25 is required at the time of application and a nonrefundable \$50 registration fee must be paid when an applicant receives notice of acceptance.

University Health Requirements

Each entering student, graduate or undergraduate, is expected to assume personal responsibility for the

health requirements adopted by the Board of Trustees of Cornell University. Prospective students should consult the *Announcement of General Information*. Permission to register for a new semester will not be granted unless all health requirements pertaining to the previous semester have been fulfilled.

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 by going in person; an acutely ill student will be seen promptly whether he or she 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 by tuition.

The University Health Services offers a Basic Medical Services Program (BMSP) for student spouses, on a fee-for-service basis, which is identical in benefits to the student health care outlined earlier. Most services are available at reduced cost to those who participate in the program. Contraceptive and obstetrical services are not included in this program, but other gynecological services are.

This BMSP is not to be confused with the Supplementary Accident and Health Insurance Plan for Cornell students and their dependents. The Supplementary Insurance Plan supplements basic health care by providing twelve-month insurance coverage for students and dependents over and above benefits of the Health Services, and by protecting the student or dependent when he or she is away from the Cornell campus.

Information and forms for the Basic Medical Services Program may be obtained by writing or visiting the University Health Services, Gannett Medical Clinic, Cornell University, 10 Central Avenue, Ithaca, New York 14853.

If, in the opinion of the University authorities, the student's health makes it unwise for the student to remain in the University, he or she may be required to withdraw.

Physical Education

All undergraduate students are required to complete four semesters of physical education within the first four terms. Postponements are allowed only by consent of the University Faculty Committee on Physical Education.

Exemptions from the requirement may be made by the Committee on Physical Education when it is recommended by the University Medical Department or because of unusual conditions of age, residence, or outside responsibility.

For a student entering with advanced standing, the number of terms of physical education required is reduced by the number of terms that the student has

satisfactorily completed (whether or not physical education was included in the student's program) in a college of recognized standing.

Swim Test

A fifty-yard swim test will be required of all new students who have not fulfilled the physical education requirement. All nonswimmers will be registered in beginner swim classes. This will serve as the physical education requirement during the semester or semesters involved. All other students may elect the activity of their choice from a wide range of offerings. 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 100 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 students the opportunity to earn a commission while completing their education. Participation in ROTC is voluntary. Interested students should consult the *Announcement of Officer Education*.

Courses in military science are, in general, not counted toward the various degree requirements of the College.

University Summer Session

It is usual for the Departments of Art and Architecture to offer certain studio courses as part of the University's six- or eight-week summer sessions. Further information is available from the Division of Summer Session and Extramural Courses, Cornell University, Day Hall, Ithaca, New York 14853.

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

Information on the summer term in architecture is given on page 14.

Facilities

Buildings

The College occupies Sibley Hall, Franklin Hall, part of Rand 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 85,000 books, it is capable of supporting undergraduate, graduate, and research programs. Some 1,600 serials are currently received and maintained.

The College maintains in Sibley Hall a slide library containing extensive files of 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 185,000 slides.

The facilities of the libraries of other schools and departments on campus and the Olin Library, designed primarily as a research library for graduate students, are also available.

Museums and Galleries

The new Herbert F. Johnson Museum of Art was formally opened in May 1973. Although many of its exhibitions and activities relate directly to academic programs of the University, the museum has no administrative affiliation with any department. In this way, its programs cut freely across academic boundaries, stimulating interchange among disciplines. With a strong and varied collection and a continuous series of high-quality exhibitions, it fulfills its mission as a new center for the visual arts at Cornell. Art galleries are also maintained in Willard Straight Hall, where loan exhibitions of paintings and graphic work by contemporary artists are held. Current work of students in the College of Architecture, Art, and Planning is shown in the exhibition areas in Sibley Hall and the gallery in Franklin Hall.

Housing

Cornell University provides residence halls on the campus for approximately 5500 single students. Meals may be taken where desired. Freshmen are strongly urged to live in residence halls, although there is no requirement. An application form will be mailed each candidate for admission as a freshman or transfer student at the time of notification of provisional acceptance. Assignments are made in the order in which applications are received at the Housing Assignment Office. A freshman whose application is postmarked no later than May 15 will be assured of a room assignment. Freshman applications postmarked after that date will also be honored, but in some late cases assignments may not be immediately available.

Further information about housing may be obtained from the Department of Student Housing, 223 Day Hall, Ithaca, New York 14853.

Graduate Students

Sage Graduate Center provides dormitory housing for about 190 men and women. The building is in the

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center of the campus and provides a convenient cafeteria. Cascadilla Hall houses 155 men and women. To obtain an application for graduate-student housing write to Department of Student Housing, 223 Day Hall, Ithaca, New York 14853. Forms should be returned promptly as assignment priority is established by the date of receipt of the application by the University.

Family Housing

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 southeast of the campus. For more detailed information, address inquiries to Hasbrouck Housing Office, 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. As a service to students, the University posts and maintains a partial listing of available housing in the Off-Campus Housing Office, 223 Day Hall. This office will assist students in finding satisfactory living quarters in Ithaca and the surrounding communities.

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 an academic schedule, term by term.

The Office of the Dean stands ready at all times to help and guide students, not only in academic matters, but also, when possible, in personal problems and difficulties they 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.

University Privileges

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

International Students

The staff of the University's International Student Office is prepared to advise and assist students from other countries in every way possible. It is suggested that foreign students interested in studying at Cornell University write for advice on registration, living conditions, and other matters to Director of the International Student Office, Cornell University, Barnes Hall, Ithaca, New York 14853.

Cornell University

Description of Courses

All academic courses of the University are open to students of all races, religions, ethnic origins, ages, sexes, and political persuasions. No requirement, prerequisite, device, rule, or other means shall be used by any employee of the University to encourage, establish, or maintain segregation on the basis of race, religion, ethnic origin, age, sex, or political persuasion in any academic course of the University.

Architecture

Architectural Design

Most studio courses in architectural design are intensive and are scheduled from 2 to 6 p.m., generally on Monday, Wednesday, and Friday.

Sequence Courses

101 Design I Fall. 3 credits. Studio and lecture. Open to department students only. Fee charged.
M 3:35-5:30, W F 2-5. Staff.

An introduction to design as a conceptual discipline directed at the analysis, interpretation, synthesis, and transformation of the physical environment. Exercises aimed at developing an understanding of the issues, elements, and processes of environmental design.

102 Design II Spring. 3 credits. Studio and lecture. Open to department students only. Fee charged.
M 3:35-5:30, W F 2-5. Staff.

A continuation of 101. Human, social, technical, and aesthetic factors related to space and form. Design problems ranging from the immediate environment of the individual to that of small social groups.

201-202 Design III and IV Fall or spring. 4 credits per term. Studio and seminar. Must be accompanied by Architecture 231-232. Open to department students only. Fee charged.
M W F 2-6. Staff.

301-302 Design V and VI Fall or spring. 6 credits per term. Studio and seminar. Open to department students only. Fee charged.
M W F 2-6. Staff.

401-402 Design VII and VIII Fall or spring. 6 credits per term. Studio and seminar.
M W F 2-6. Staff.

Programs offered are architectural design, urban design, or architectural technology and environmental science each term. Fee charged.

501 Design IX Fall or spring. 8 credits. Studio. Fee charged.
M W F 2-6. Staff.

502 Design X—Thesis Fall or spring. 8 credits. Studio. Fee charged.
M W F 2-6. Staff.

All students who are candidates for the degree of Bachelor of Architecture will be required to complete satisfactorily a thesis during one term of the last year in residence. Students accepted for admission to the graduate studio are exempt from the thesis requirement.

503-504 Design IX—Thesis I and Design X—Thesis II Fall or spring. 8 credits per term. Studio. Fee charged.
M W F 2-6. Staff.

Upon approval by the department students may elect to spend two terms working on the thesis.

510 Thesis Introduction Fall or spring. 2 credits. Lecture and seminar.
T 1:15-3:20. Staff.

Required of all architecture students in the year preceding their thesis. Lectures, seminars, and independent research leading to complete development of the student's thesis program. General instruction in the definition, programming, and development of a thesis will be followed by tutorial work with the student's advisory committee.

601-602 Special Program Fall or spring. 8 credits per term. To be arranged with faculty during the fourth year. Intended primarily for students applying to a graduate program in the College. Fee charged.
Hours to be arranged. Staff.

111-112 Elective Design Studio 111, fall; 112, spring. 3 credits. Registration restricted to out-of-department students. Permission by department office required. To be coordinated by Department of Architecture Office. Fee charged.
M 3:35-5:30, W F 2-5. Staff.

200, 300, 400, 500 Elective Design Fall or spring. Credit as assigned. Open by permission to

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out-of-department students or to transfer students who have not been assigned to a sequence course. The student will be assigned to work with a class of appropriate level. Fee charged.

M W F 2-6. Staff.

Nonsequence Courses

310 Special Problems in Architectural Design

Fall or spring. Independent study. Registration and credit by arrangement.

Hours to be arranged. Staff.

611-612 Urban Housing Developments 611, fall; 612, spring. 2 credits per term. Seminar. Limited to fourth- and fifth-year students in architecture and graduate students. Prerequisite: permission of instructor.

Hours to be arranged. O. M. Ungers.

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

613 Transportation Fall. 2 credits. Seminar.

Prerequisite: permission of instructor.

Th 3:30-5:30. P. Cohen, A. Meyburg.

A seminar concerning the impact of various transportation forms upon the environment involving architects, engineers, planners, and human ecologists. Readings and discussions of past, current, and future transportation modes will focus on the aesthetic and physical aspects.

614 Low-Cost Housing Spring. 3 credits.

Seminar. Prerequisite: permission of instructor.

T Th 1:25-2:15. F. O. Slate, P. Cohen,

C. B. Daniels, H. W. Richardson.

The major objectives of this course are to present aspects of low-cost housing involving engineering technology, architecture, physical planning, economics, and sociology.

618-619 Seminar in Urban and Regional Design

618, fall; 619, spring. 3 credits per term. Open to fifth-year and graduate students.

Hours to be arranged. O. M. Ungers, staff, visitors.

Deals with a broad range of issues and problems of urban and regional development and the context in which the design functions. Selected case studies are presented by the participants and visitors.

Graduate Courses

711-712 Problems in Architectural Design 711,

fall; 712, spring. 9 credits per term. Studio and seminar. Open to fifth-year undergraduate students by permission of chairman and instructor.

Hours to be arranged. Staff.

The basic first-year design course for graduate students whose major concentration is architectural design.

713-714 Problems in Urban Design 713, fall;

714, spring. 9 credits per term. Studio and seminar. Open to fifth-year undergraduate students by permission of chairman and instructor.

Hours to be arranged. Staff.

The basic first-year design course for graduate students whose major concentration is urban design.

715-716 Problems in Regional Design 715, fall;

716, spring. 9 credits per term. Studio and seminar. Open to fifth-year undergraduate students by permission of chairman and instructor.

Hours to be arranged. Staff.

The basic first-year design course for graduate students whose major concentration is regional design.

811 Thesis or Research in Architectural Design

Fall or spring. 9 credits.

Hours to be arranged. Staff.

Second-year design course for graduate students whose major concentration is architectural design.

812 Thesis or Research in Urban Design Fall or

spring. 9 credits.

Hours to be arranged. Staff.

Second-year design course for graduate students whose major concentration is urban design.

813 Thesis or Research in Regional Design

Fall or spring. 9 credits.

Hours to be arranged. Staff.

Second-year design course for graduate students whose major concentration is regional design.

Structures

Sequence Courses

221 Mathematical Techniques Fall. 3 credits.

Two lectures and one recitation.

T Th 10:10-11. Mathematics department staff.

Introduction to mathematical concepts and operations used in architecture.

222 Structural Concepts Fall or spring. 4 credits.

Lectures and seminars. Prerequisite: Arch 221 or approved equivalent.

T Th 9:05-11. Staff.

Fundamental concepts of structural behavior. Statics and strength of materials.

321 Structural Systems I Fall. 3 credits. Lectures

and seminars. Prerequisites: Arch 221 and 222.

T Th 11:15-1:10. Staff.

Structural design concepts and procedures for steel building construction.

322 Structural Systems II Spring. 3 credits.

Prerequisite: Arch 222.

T Th 11:15-1:10. Staff.

Structural design concepts and procedures for reinforced concrete building construction.

Nonsequence Courses

323 Advanced Steel Building Design Fall.

3 credits. Seminar. Prerequisites: Arch 321 and permission of instructor.

F. W. Saul.

Design and investigation of advanced systems of steel building structure, plastic design of continuous beams, rigid frames, and highrise buildings.

[324 Surface Structures] Spring. 3 credits. Seminar. Permission of instructor required. Not offered 1977-78.

D. P. 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.]

326 Building Substructure Spring. 3 credits. Seminar. Prerequisites: Arch 322 or concurrent registration and permission of instructor.

Hours to be arranged. F. W. Saul.

The principles of soil mechanics and subsurface exploration. Design of building foundations—footings, piles, and subgrade walls.

328 Advanced Reinforced Concrete Building Systems Spring. 3 credits. Seminar. Prerequisites: Arch 322 and permission of instructor.

Hours to be arranged. Staff.

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. Other selected topics.

Architectural Principles, Theories, and Methods

Sequence Courses

131 Introduction to Architecture Fall. 2 credits. Lecture. Open to out-of-College students.

M 1:25-3:20. A. Kira.

An introduction to the built and natural environments as cultural context. The field of architecture as an environmental design discipline and its relation to other fields.

231 Architectural Elements and Principles Fall. 3 credits. Studio and lecture. Architecture students must register for this course with Architecture 201.

W F 9:05-11. M. Harms, H. Richardson,

W. Goehner.

Theory of the order, perception, and function of architectural space. Discourse on the nature of architectural systems and an examination of the multiplicity of ways they can be used to solve architectural problems. Demonstrative exercises.

232 Design Methods and Programming Spring. 3 credits. Studio and lecture. Architecture students must register for this course with Architecture 202.

W F 9:25-11. M. Harms, H. Richardson,

W. Goehner.

Basic methods for developing architectural programs. Emphasizes programming as a conceptual as well as a descriptive task. Basic methods of design. Stresses analytic and synthetic skills. Demonstrative exercises.

630-631 Advanced Seminar in Architecture

630, fall; 631, spring. 1 credit per term. Required of

all fifth-year architecture students. Open to graduate students.

W 8-10 p.m. Staff and visiting critics.

Nonsequence Courses

333 Computer Applications Spring. 3 credits. Prerequisites: one term of calculus, (Arch 221 or equivalent), one term of FORTRAN programming, Comp Sci 100 and 106, or equivalent.

Hours to be arranged. D. P. Greenberg.

The course is designed to acquaint the student with current uses and potentials of digital computers in the architecture profession. Topics include architectural and planning models, structural analyses, energy simulation, critical path scheduling, and computer graphics.

334 Computer Graphics Fall. 3 credits. Prerequisites: two terms of calculus, Comp Sci 211, or equivalent.

Hours to be arranged. D. P. Greenberg.

Introduction to the principles of interactive computer graphics, including input techniques, display devices, display files, interactive graphic techniques, two- and three-dimensional computer graphics, perspective transformations, hidden line and hidden surface algorithms, and color picture generation.

335-336 Theory of Architecture 335, fall; 336, spring. 3 credits per term. Lecture. Prerequisite: Arch 231-232 or permission of instructor.

T Th 4:40-6:30 p.m. L. Hodgden.

437-438 Special Projects in Computer Graphics

437, fall; 438, spring. 4 credits. Prerequisites: Arch 334, concurrent registration in Comp Sci 314, or equivalent. Enrollment limited to third-year students or above. Permission of instructor required.

Hours to be arranged. D. P. Greenberg.

Advanced work in computer graphics input and display techniques, including storage tube, dynamic vector, and color raster displays.

[531-532 Computer-Aided Structural Design

531, fall; 532, spring. 4 credits. Prerequisites: Arch 334, CEE G301 and CEE G302 Structural Engineering, concurrent registration in CEE G612 Advanced Structural Analysis. Enrollment limited to fourth-year students and above. Permission of instructor required. Not offered 1977-78.

D. P. Greenberg.

Advanced topics involving interactive computer graphics and advanced structural analysis techniques.]

[533-534 Computer-Aided Environmental

Design 533, fall; 534, spring. 4 credits. Prerequisites: Arch 334 and 362, one year of college physics. Enrollment limited to fourth-year students and above. Permission of instructor required. Not offered 1977-78.

D. P. Greenberg.

Advanced topics involving interactive computer graphic and advanced environmental design techniques. Topics may include acoustics, lighting, and energy analyses.]

633-634 Introduction to Comparative Theories in Inquiry 633, fall; 634, spring. 3 credits per term. Seminar. Third-year students and above.

Hours to be arranged. D. M. Simons.

The study of approaches to problem inquiry: the formal procedures of the fields of architecture, natural sciences, and applied sciences and the aesthetic and rational intelligences exemplified in these. Discussions of significant writings from the various fields.

635 Rationalist and Idealist Concepts of Architecture Spring. 3 credits. Open to undergraduate and graduate students. Prerequisite: permission of instructor.

W 8-10 p.m. W. G. Lesnikowski.

Comparative study of philosophical and aesthetic concepts of rationalism and idealism in nineteenth- and twentieth-century architecture. Concepts of organic architecture, unity, dualism, core and centrum, symbolism, regular and irregular forms, morphological patterns. Lectures and research into problems of architectural aesthetics.

639 Principles of Design Process Fall. 3 credits. Seminar. Third-year architecture students and above. Out-of-college students by permission of instructor.

Hours to be arranged. A. Mackenzie.

Analysis of the major theories and techniques of design developed during the past fifteen years, with special emphasis on application to the solution of whole problems in architectural design. Students are required to complete exercises and a paper or a project.

Note: **667-668 Architecture in its Cultural Context I and II** is accepted as a theory course.

Architectural History

Sequence Courses

141-142 History of Architecture I and II 141, fall; 142, spring. 3 credits per term. Lecture. Students in other colleges may take either or both terms for credit.

T Th 11:15-1:10. C. F. Otto and staff.

History of architecture as social and cultural expression of Western civilization. Selected examples from Mesopotamia to the eighteenth century are considered in the fall; history of modern architecture is discussed in the spring. Slide lectures, readings, short papers, and examinations.

Nonsequence Courses

244 History of Preindustrial Building Spring. 4 credits. Lecture.

Hours to be arranged. W. W. Cumber.

The development of traditional architectural elements and forms; materials, methods, and design expression. Lectures, readings, and papers or exercises.

[340 Architecture of the Ancient Near East] Spring. 3 credits. Lecture. Prerequisite: Arch 141 or permission of instructor. Not offered 1977-78.

W. W. Cumber.

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

341 Architecture of the Classical World Fall. 3 credits. Prerequisite: Arch 141 or permission of instructor.

Hours to be arranged. W. W. Cumber.

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

343 Introduction to the History of Urban Planning (also CRP 460) Fall. 3 credits.

J. W. Reys, W. W. Cumber, S. W. Jacobs.

Survey of urban planning in Western civilization from the Greeks and Romans, through medieval, Renaissance, and modern Europe, to colonial and nineteenth-century America. Lecture, discussion sessions, readings, and term paper.

[344 Islamic Architecture] 3 credits. Lecture. Prerequisite: permission of the instructor. Not offered 1977-78.]

346 The Renaissance Fall. 3 credits. Lecture. Prerequisites: Arch 141-142 and permission of instructor.

T Th 9:05-11. C. F. Otto.

European architecture and city planning of the fifteenth and sixteenth centuries.

347 The Baroque Fall. 3 credits. Lecture. Prerequisites: Arch 141-142 and permission of instructor.

T Th 9:05-11. C. F. Otto.

European architecture and city planning of the seventeenth and eighteenth centuries.

348 American Architecture Fall or spring. 3 credits. Lecture. Prerequisites: Arch 141 and 142 or permission of instructor.

M W 10:10-12:05. S. Jacobs.

Building in the United States from colonial time to 1860, in the fall; after 1860, in the spring.

349 Modern European Architecture Fall. 3 credits. Prerequisite: permission of instructor.

T Th 9:05-11. C. F. Otto.

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

442 Historical Seminars in Architecture Fall or spring. 2 credits. Prerequisite: permission of instructor.

Hours to be arranged. Staff.

Using historical evidence as a basis, students will prepare papers discussing problems relating to design or architecture.

445 Special Investigations in the History of Architecture Fall or spring. Variable credit. Independent study. Prerequisite: permission of instructor.

Hours to be arranged. Staff.

447 History Workshop Fall or spring. Variable credit. Seminar.

Hours to be arranged. Staff.

448 Historical Lectures in Architecture Fall or spring. Variable credit. Lecture. Prerequisite: permission of instructor.

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

540 Architectural Problems in Archaeological Fieldwork Fall or spring. 3 credits. Seminar.

Hours to be arranged. W. W. Cummer.
A review and critique of students' participation in the excavation of ancient cities or historic sites during the previous summer. For students in architecture and archaeology.

541 Surveying for Archeologists Fall. 3 credits.

Hours to be arranged. W. W. Cummer and staff.
The excavation architect on an archaeological team. Methods of site survey, recording ancient buildings, and preparation of working, analytic, and restored drawings. For students in architecture or archaeology who anticipate joining a summer excavation.

542 Methods of Archival Research (also CRP 404) Spring. 3 credits. Lecture.

Th 10:10-12:05. K. C. 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.

544 Case Studies in Preservation Planning

Fall or spring. 2 credits. Seminar.
M 2:30-4:25. S. W. Jacobs, staff, visiting lecturers.
A review and critique of preservation planning projects selected to indicate the range of current approaches.

545 Design and Conservation (also CRP 844)

Fall. 2 credits. Seminar.
Th 2:30-4:25. S. W. Jacobs, B. Jones.
Introductory course for preservation planning. The rationale for and methods of using existing cultural and aesthetic resources in the planning and design of regions and cities.

546 Documentation for Preservation Planning (also CRP 845) Fall or spring. 2 credits. Seminar.

Hours to be arranged. S. W. Jacobs, staff, visiting lecturers.
Methods of collecting, recording, processing, and analyzing historical architectural and planning materials.

548 Problems in Modern Architecture Spring. 2 credits. Lecture. Prerequisite: permission of instructor.

Hours to be arranged. Staff.

[640 Seminar in Architecture of the Ancient Near East Fall. 4 credits. Prerequisite: Arch 340 or permission of instructor. Not offered 1977-78.

W. W. Cummer.
Problems in Near Eastern architectural history.]

641 Seminar in Architecture of the Classical World Fall or spring. 4 credits. Seminar. Prerequisite:

Arch 341 or permission of instructor.

Hours to be arranged. W. W. Cummer.
Problems in Greek and Roman architectural history.

645 Building Material Conservation Fall or spring. 3 credits. Lecture. Open to upperclass and graduate students.

T 11:15-1:10. Staff.
A survey of the development of building materials in the United States, chiefly during the nineteenth and early twentieth centuries, and a review of the measures which might be taken to conserve them.

646 Seminar in the Renaissance Fall or spring. 4 credits. Seminar. Prerequisite: Arch 346 or permission of instructor.

Hours to be arranged. C. F. Otto.
Historical problems of European architecture and city planning of the fifteenth and sixteenth centuries.

647 Seminar in the Baroque Fall or spring. 4 credits. Seminar. Prerequisite: Arch 349 or permission of instructor.

Hours to be arranged. C. F. Otto.
Historical problems in European architecture and city planning of the seventeenth and eighteenth centuries.

648 Seminar in the History of American Architecture Spring. 4 credits. Seminar. Prerequisite: permission of instructor.

M 3:20-5:30. S. W. Jacobs.
Investigation by means of reading, lectures, and reports of historical problems in architecture of the nineteenth and twentieth centuries in the United States.

649 Seminar in the History of Modern Architecture Fall. 4 credits. Seminar. Prerequisite: permission of instructor.

Hours to be arranged. Staff.
Problems in modern art and architecture.

Graduate Courses

740 Informal Study in the History of Architecture

Fall or spring. Variable credit. Independent study. Prerequisite: permission of instructor.
Hours to be arranged. Staff.

741 Introductory Seminar in the History of Architecture and Urban Development Fall. 2 credits. Seminar.

W 2:30-4:25. S. W. Jacobs, C. F. Otto, staff.
Motives, methods, and resources for scholarly work in history of architecture and history of urban development. Discussions, readings, and reports. Required for graduate students entering the field, and undergraduates in BFA history of architecture program.

840 Thesis in Architectural History Fall or spring. Variable credit.

Hours to be arranged. Staff.
Independent study for the master's degree.

940 Dissertation in Architectural History Fall or spring. Variable credit.

Hours to be arranged. Staff.
Independent research by candidates for the Ph.D. degree.

Design Communications

Sequence Courses

151 Design Fundamentals I Fall. 2 credits.
Studio and lecture.
Staff.

Fundamentals of visual and conceptual organization. Dynamics of perception; spatial organization and its representation. Demonstrative problems of an analytic and conceptual nature.

152 Design Fundamentals II Spring. 2 credits.
Studio and lecture.
Staff.

Theory of visual and conceptual organization, spatial perception, spatial organization and its representation; demonstrative problems of an analytic and conceptual nature.

[251 Advanced Visual Communications] Fall or spring. 3 credits. Lecture. Not offered 1977-78.
S. Bowman.

Introduction to photographic tools and methods and their application to architectural presentation and design simulation.]

Nonsequence Courses

250 Beginning Photography (also Art 161) Fall or spring. 3 credits. Lecture/studio.
T Th 1:25-4:25. S. Bowman.

A lecture-studio course in black and white photography for beginners. Emphasis on basic camera skill, darkroom techniques, and understanding of photographic imagery. Fee charged.

350 Intermediate Photography (also Art 162) Fall or spring. 3 credits. Studio. Prerequisite: Arch 250 or permission of instructor.
T Th 2:30-4:25. Staff.

A studio course in black and white photography at the intermediate level. Emphasis on expanding camera and darkroom skills, image, content, and creative use of black and white photography. Fee charged.

[351 Photo Tools for Architects] Fall or spring. 3 credits. Lecture/studio. Prerequisite: Arch 152 or 250 or permission of instructor. Not offered 1977-78. A lecture-studio in the use of photography in architecture. Emphasis on architectural photography, photography as a graphic tool, photographic techniques in design, and photographic methods in presentation. Fee charged.]

[352 Color Photography (also Art 262)] Spring. 3 credits. Studio. Prerequisite: Arch 250 or permission of instructor. Not offered 1977-78. A studio course in color photography. Emphasis on camera skill, basic color darkroom techniques, image content, and creative use of color photography. Fee charged.]

[353 Photo Processes (also Art 263)] Fall or spring. 3 credits. Studio. Prerequisite: Arch 250 or permission of instructor. Not offered 1977-78. A studio course in early photo and nonsilver processes. Emphasis on camera skill, basic techniques and processes, image content, and creative use of photo processes. Fee charged.]

[354 Fundamentals of Motion Film] Fall. 3 credits. Lecture/studio. Prerequisite: Arch 250 or permission of instructor. Not offered 1977-78. A lecture-studio course in basic principles of motion film in 16mm format, black and white and color, including use of camera and basic editing techniques. Fee charged.]

355 Graphic Design Studio Fall or spring. 3 credits. Lecture/studio. Prerequisite: Arch 152 or permission of instructor.

T Th 11:15-1:10. Staff.

An introduction lecture-studio course in design and preparation of materials for reproduction in print media. Studio in typography, available printing processes, and photomechanical methods of reproduction.

356 Architectural Simulation Techniques Spring. 3 credits. Lecture/studio. Prerequisite: Arch 152 or permission of instructor.

Th 5-7 p.m. G. Hascup.

A lecture-studio course in two- and three-dimensional simulation techniques in architecture. Emphasis on simulation of environment, space, materials, and lighting as visual tools for architectural design.

357 Large Format Architectural Photography Spring. 3 credits. Lecture/studio. Prerequisites: Arch 250 and one 300-level photography course or permission of instructor.

Hours to be arranged. Staff.

A lecture-studio course dealing with the special uses of large format view camera photography. Emphasis on the creative use of the view camera in architectural photography.

450 Advanced Photography (also Art 261) Fall. 3 credits. Studio. Prerequisite: Arch 350 or permission of instructor.

T Th 9:05-12:05. S. Bowman.

A studio course in black and white photography. Emphasis on advanced camera and darkroom skills, image content, and creative use of black and white photography. Fee charged.

[451 Advanced Graphic Design] Spring. 3 credits. Lecture/studio. Prerequisite: Arch 355 or permission of instructor. Not offered 1977-78. An advanced lecture-studio course in design and preparation of materials for reproduction in print media. Emphasis on specialized projects dealing with graphic processes.]

452 Media Environments Studio Spring. 3 credits. Studio. Prerequisite: Arch 250 or permission of instructor.

W 6-10 p.m. Staff.

A studio course dealing with programmed multiple

projection presentations as communication systems, including the use of multiscreen slides, motion film, and sound in the creation of media environment. Fee charged.

457 Special Project in Photography Fall or spring. Variable credit. Independent study. Prerequisite: permission of instructor in design communications.

Hours to be arranged. Staff.

An independent study course for exploration of a special project. Written proposal required.

458 Special Project in Design Communication Fall or spring. Variable credit. Independent study. Prerequisite: permission of instructor in design communications.

Hours to be arranged. Staff.

An independent study course for exploration of a special project. Written proposal required.

459 Thesis Project in Design Communication

Fall or spring. 6 credits. Independent study. Prerequisite: design communications majors only.

Hours to be arranged. Staff.

A special study in design communication leading to a thesis project. Written proposal required.

Architectural Science and Technology

Sequence Courses

162 Introduction to Social Sciences in Design

Spring. 2 credits. Lecture.

M W F 9:05-9:55. R. D. MacDougall.

An introduction to concepts and methods in the social sciences for architects and how approaches from anthropology, environmental psychology, and sociology can be used in the study and design of the built environment.

261 Introduction to Environmental Science

Fall. 2 credits. Lecture.

M W F 9:05-9:55. P. J. Trowbridge, staff, visiting lecturer.

An introduction to the basic principles involved in inventory and analysis techniques as they relate to design implementation in the outdoor environment. Case studies depicting application of these principles at all scales of land planning and design will be presented.

262 Building Technology, Materials, and Methods

Spring. 3 credits. Lecture. Prerequisites: Arch 162 and 261.

M W F 12:20-1:10. R. Crump.

Properties of materials—their use and application to the design of buildings and building systems. Discussion of various methods of building construction and assembly.

361 Environmental Controls I Fall. 3 credits.

Lecture. Prerequisite: Arch 262.

M W F 10:10-11. R. Crump.

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 with good and bad examples.

362 Environmental Controls II Spring. 2 credits.

Lecture. Prerequisite: Arch 361.

W F 11:15-1:10. R. Crump.

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

Nonsequence Courses

371 Environmental Technology Workshop I

Fall. 2 credits. Studio. Must be preceded or accompanied by Arch 361.

Hours to be arranged. R. Crump.

The tasks of the acoustical consultant, the electrical engineer, and the illumination consultant in relation to the architect's work. Acoustical and lighting design studies using full-scale mock-ups and specific building type studies. Cost factors.

372 Environmental Technology Workshop II

Spring. 2 credits. Studio. Must be preceded or accompanied by Arch 362.

Hours to be arranged. R. Crump.

The mechanical engineer's task and its relation to the architectural design process. Mechanical equipment 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.

561-562 Special Problems in Architectural Science

561, fall; 562, spring. Variable credit.

Independent study. Prerequisite: permission of science staff instructor.

Hours to be arranged. Staff.

662 Environmental Control Systems Spring.

3 credits. Lecture/seminar. Prerequisites: Arch 362.

Hours to be arranged. R. 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.

[666 Human Factors in Architecture Spring.

3 credits. Lecture. Open to upperclass and graduate students and to students in related design fields by permission of instructor. Not offered 1977-78.

A. Kira.

Introduction to "Ergonomics" as it relates to problems of architectural design and detailing. Normal and special population groups, applications of anthropometric data, activity space requirements, controls, and hardware. Emphasis on architectural applications from the viewpoint of user requirements.]

667-668 Architecture in Its Cultural Context I

and II 667, fall; 668, spring. 4 credits per term.

Seminar. Prerequisite: permission of instructor.

T 1:25-3:20. R. D. MacDougall.

Fall term, theory; spring term, method and problem solving. An examination of the relationship between architecture and other aspects of culture. Emphasis

on the motivations for particular architectural forms, and especially on theories of architecture. Examples from the United States and Asia.

Graduate Courses

761-762 Architectural Science Laboratory

761, fall; 762, spring. 6 credits per term. Open to graduate students only.

Hours to be arranged. Staff.

Projects, exercises, and research in the architectural sciences.

763-764 Thesis or Research in Architectural Science

763, fall; 764, spring. Variable credit.

Hours to be arranged.

Independent study. Open to graduate students only.

The Profession of Architecture

Sequence Course

481-482 Professional Practice 481, fall; 482 spring. 2 credits per term. Lecture.

Th 1:25-3:20. M. L. Schack and staff.

An examination of organizational and management theories and practices for delivering professional design services. Included are an assessment of the building industry and its influence on practice; an analysis of the basic management functions within professional firms; and the legal concerns facing practitioners today. Lectures and seminar/workshop sessions with selected guest participants will use case studies as a major instructional vehicle.

Architectural Drawing

191 Analytical Drawing I Fall. 2 credits. Studio.

T Th 9:05-11. M. Dennis.

Freehand drawing with emphasis on line and perspective representation of form and space.

192 Analytical Drawing II Spring. 2 credits.

Studio. Prerequisite: Arch 191.

T Th 9:05-11. M. Dennis and staff.

Freehand drawing as a means of conceiving and expressing spatial form; line weight, shades and shadows, and figure drawing.

Art

Most courses 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. All students must register at the department office.

Times have been indicated only for those art courses and sections that meet at irregular hours.

A fee is charged for all Department of Art courses.

Courses in Theory and Criticism

110 Color, Form, and Space Fall. 3 credits.

N. Daly.

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

111 Introductory Art Seminar Fall. 1 credit.

B.F.A. candidates only.

Students will meet for one hour each week with a different member of the faculty. The varying artistic interests of the staff will be presented and discussed.

610 Seminar in Art Criticism Fall or spring.

2 credits. May be repeated for credit. Four terms required of Master of Fine Arts candidates. Open to other graduate students.

W 4-6. J. Seley.

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

Studio Courses in Painting

121-122 Introductory Painting 121, fall; 122, spring. 3 credits per term.

Sec 1, M W F 1:25-3:20; Sec 2 and Sec 3, Th 1:25-4:25. Staff.

An introduction to the problems of artistic expression through the study of pictorial composition; proportion, space, shapes, and color as applied to abstract and representational design.

221-222 Second-Year Painting 221, fall; 222, spring. 3 credits per term. Prerequisite: Art 121 or 122 or permission of instructor.

Staff.

Study of traditional and contemporary media.

321 Third-Year Painting Fall. 4 credits. Prerequisite: nine to twelve studio hours, depending on major.

Staff.

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

322 Third-Year Painting Spring. 4 credits.

Prerequisite: Art 321.

T Th 9:05-12:05. Staff.

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

421 Fourth-Year Painting Fall. 4 credits.

Prerequisite: Art 322.

Staff.

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

422 Senior Thesis in Painting Spring. 4 credits.

Prerequisite: Art 421.

T Th 9:05-12:05. Staff.

Advanced painting project to demonstrate creative ability and technical proficiency.

720 Graduate Painting Fall or spring. Credits as assigned. May be repeated for credit. For Master of Fine Arts students in painting.

Staff.

Students are responsible, under direction, for planning their own projects and selecting the media in which

they are to work. All members of the staff are available for individual consultation.

Studio Courses in Graphics Arts

131 Introduction to the Graphic Arts Fall or spring. 3 credits.

Fall, M W F 9:05-11; Spring, T Th 9:05-12.
P. Thompson.

Students will explore the techniques of making impressions from the raised surface of the relief print, the lowered surface of the intaglio print, and the flat (planographic) surface of the lithograph.

132 Introductory Silk-Screen Printing Fall or spring. 3 credits.

Fall, T Th 9:05-12; Spring, M W F 9:05-11.
S. Poleskie.

A basic introduction to the various methods used in fine art silk-screen printing. Students will explore the use of lacquer film, paper stencil, tusche and glue, and other commonly used procedures of serigraphy.

230 Advanced Intaglio Printing Fall or spring. 3 credits. Prerequisite: Art 131, 132, or permission of instructor.

Fall, M W F 1:25-3:20. P. Thompson.

Continuation of the study and practice of methods of printing from below the surface with emphasis on engraving, lift ground, experimental techniques, and color.

232 Plate Lithography Spring. 3 credits. Prerequisite: Art 131, 132, or permission of instructor.

M W F 9:05-11. A. Singer.

The special problems relating to the use of the aluminum lithographic plate will be studied. Particular importance will be placed upon the role of the plate in color printing.

233 Stone Lithography Fall. 3 credits. Prerequisite: Art 131, 132, or permission of instructor.

T Th 9:05-12. A. Singer.

The theory and practice of planography, utilizing limestone block. The basic lithographic techniques of crayon, wash, and transfer will be studied.

330 Advanced Silk-Screen Printing Fall or spring. 3 credits. Prerequisite: Art 132.

Spring, M W F 1:25-3:20. S. Poleskie.

Continuation of Art 132 including photographic stencils, three-dimensional printing, and printing on metal, plastic, and textiles.

331 Advanced Printmaking Fall. 4 credits. Prerequisites: six hours of graphic art courses.

M W F 1:25-3:20. P. Thompson.

Study of the art of graphics through both assigned and independent projects. Work may be concentrated in any one of the graphic media or in a combination of media.

332 Advanced Printmaking Spring. 4 credits. Prerequisite: six hours of graphic art courses.

P. Thompson.

Continuation and expansion of Art 331.

431 Senior Printmaking Fall. 4 credits. Prerequisite: courses in printmaking.

By arrangement. Staff.

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

432 Senior Thesis in Printmaking Spring. 4 credits. Prerequisite: four courses in printmaking.

By arrangement. Staff.

Advanced printmaking project to demonstrate creative ability and technical proficiency.

731-732, 831-832 Graduate Printmaking 731 and 831, fall; 732 and 832, spring. Credit as assigned. May be repeated for credit. For Master of Fine Arts candidates in graphic arts. Prerequisite: permission of instructor.

Staff.

Students are responsible, under direction, for planning their own projects and selecting the media in which they will work. Members of the staff are available for consultation; discussion sessions of work in progress are held.

Studio Courses in Sculpture

141-142 Introductory Sculpture 141, fall; 142, spring. 3 credits per term.

141: Sec 2, T Th 9:05-12:05. 142: Sec 2, T Th 9:05-12:05. Staff.

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.

241-242 Second-Year Sculpture 241, fall; 242, spring. 3 credits per term. Prerequisites: non-majors, none; majors, Art 141-142.

M W F Sec 1, 1:25-3:20. Staff.

Various materials including clay, plaster, wood, and stone will be used for exercises involving figurative modeling, abstract carving, and other aspects of three-dimensional form and design.

341 Third-Year Sculpture Fall. 4 credits. Prerequisite: Art 242.

Sec 1, M W F 1:25-3:20. Staff.

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

342 Third-Year Sculpture Spring. 4 credits. Prerequisite: Art 341.

Sec 1, M W F 1:25-3:20. Staff.

Continuation and expansion of Art 341.

441 Fourth-Year Sculpture Fall. 4 credits. Prerequisite: Art 342.

Sec 1, M W F 1:25-3:20. Staff.

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

442 Senior Thesis in Sculpture Spring.
4 credits. Prerequisite: Art 441.

Sec 1, M W F 1:25-3:20.

Advanced sculpture project to demonstrate creative ability and technical proficiency.

840 Graduate Sculpture Fall or spring. Credit as assigned. May be repeated for credit. For Master of Fine Arts students in sculpture.

Staff.

Students are responsible, under direction, for planning their own projects and selecting the media in which they are 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 Photography

161 Beginning Photography Fall or spring.
3 credits.

S. Bowman.

A lecture-studio course in black and white photography for beginners. Emphasis upon basic camera skills, darkroom techniques, and understanding of photographic imagery. Additional fee charged.

162 Intermediate Photography Fall or spring.
3 credits. Prerequisite: Art 161 or permission of instructor.

J. Livingston.

A studio course in black and white photography at the intermediate level. Emphasis upon expanding camera and darkroom skills, image content, and creative use of black and white photography. Additional fee charged.

261 Advanced Photography Fall. 3 credits.
Prerequisite: Art 162 or permission of instructor.

T Th 9:05-12:05. S. Bowman.

A studio course in black and white photography. Emphasis upon advanced camera and darkroom skills, image content, and creative use of black and white photography. Additional fee charged.

262 Color Photography Spring. 3 credits.
Prerequisite: Art 161 or permission of instructor.

Staff.

A studio course in color photography. Emphasis upon camera skill, basic color darkroom techniques, image content, and creative use of color photography. Additional fee charged.

[263 Photo Processes Fall or spring. 3 credits.
Prerequisite: Art 161 or permission of instructor. Not offered 1977-78.

Staff.

A studio course in early photo and nonsilver processes. Emphasis upon camera skill, basic techniques and processes, image content, and creative use of photo processes.

361-362 Third-Year Photography 361, fall;
362, spring. 4 credits per term. Prerequisite: Art 261 or permission of instructor.

Fall, T Th 2:30-5:25; spring, T Th 6-9 p.m. Staff.

A studio course for photography majors and other qualified students. Continued study of creative use

of photography with emphasis upon specialized individual projects. Fee charged.

461-462 Fourth-Year Photography 461, fall;
462, spring. 4 credits. Prerequisites: Art 361-362 or permission of instructor. Requirement: Offered only to students entering in fall '77.

Fall, T Th 2:30-5:25; spring, T Th 6-9 p.m. Staff.

A studio course for photography majors and other qualified students. Continued study of creative use of photography leading to thesis exhibition. Fee charged.

Studio Courses in Drawing

151-152 First-Year Drawing 151, Fall; 152,
spring. 3 credits per term.

Fall: Sec 1, M W F 9:05-11; Sec 2, T Th 9:05-11,
plus 2 hours to be arranged; Sec 3, T Th 9-12:05.

Spring: Sec 1, M W F 9:05-11; Sec 3, T Th 9:05-11,
plus two hours to be arranged. Staff.

A basic drawing course in the study of form and techniques. Contemporary and historical examples of figure drawing are analyzed in discussion.

251-252 Second-Year Drawing 251, fall; 252,
spring. 3 credits per term. Prerequisite: Art 151, 152,
or permission of instructor.

Spring: Sec 1, T Th 8-9:55, plus two hours to be
arranged. Staff.

A continuation of the basic studies undertaken in Art 151, but with a closer analysis of the structure of the figure and a wider exploitation of its purely pictorial qualities.

351 Third-Year Drawing Fall. 3 credits. Pre-
requisites: Art 151, 152, 251, 252.

Staff.

An advanced drawing course which is a continuation of the drawing sequence above with a greater emphasis on self-expression.

Graduate Thesis

712 Graduate Thesis Spring. Credit as assigned.
Staff.

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

Special Studio Courses

270 Special Studio Fall or spring. Credit as
assigned. May be repeated for credit. Permission of
instructor required.

Staff.

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

370 Studio Concentration Fall or spring. Credit
as assigned. May be repeated for credit. Permission
of instructor is required.

Staff.

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

City and Regional Planning

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

Almost all of the courses in the department have been renumbered this year to reflect the present structure of the Department of City and Regional Planning. There are two components to these new course numbers:

(a) Courses numbered from 500-599 and 600-699 are generally considered to be introductory and/or first-year graduate courses; those numbered from 700-799 and 800-899 are generally considered to be more advanced graduate courses. Upperclass undergraduate courses are numbered from 400-499. (Undergraduates with the necessary prerequisites and permission of the instructor may enroll in courses numbered 500 and above.)

(b) Courses are grouped (by the tens digit of the course number) to represent the underlying structure of the planning curriculum as follows: theory and quantitative methods (0, 1, 2), program areas (3, 4, 5), and interprogram topics (6, 7, 8, 9). To facilitate the transition to these new course numbers, this year's catalog lists the old course number in parentheses immediately following the new numbers.

A list of specific courses to be offered each semester will be available in the department office (106 W. Sibley) at the beginning of the semester.

Urban and Regional Theory

400 Introduction to Urban and Regional Theory Fall. 4 credits.

W. W. Goldsmith.

A first-year graduate course, open to juniors and seniors, 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, integrated by a Marxist analysis of the shortcomings of planning.

500 (710) Introduction to Urban and Regional Theory Fall. 4 credits.

W. W. Goldsmith.

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, integrated by a Marxist analysis of the shortcomings of planning.

600 (512) Urban Economic Analysis Spring. 3 credits. Prerequisite: 500 or equivalent.

S. Czamanski.

Examination of the city as an economic entity with spatial characteristics. Urban phenomena are analyzed from an economic point of view, using economic analysis tools. Areas to be examined include patterns and determinants of urbanization, urban structure and location of activities, urban land and housing markets, the role of urban transportation, and urban public policy.

708 Fieldwork/Workshop in Urban and Regional Theory Fall or spring. Credit as assigned. Staff.

Work on problems in urban and regional theory in a field and/or laboratory setting.

709 Special Topics in Urban and Regional Theory Fall or spring. Credit as assigned. Staff.

800 (916) Advanced Seminar in Urban and Regional Theory I Fall. 2 credits. Prerequisite: 500.

B. G. 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.

801 (917) Advanced Seminar in Urban and Regional Theory II Spring. 2 credits. Prerequisite: 800.

B. G. Jones.

A continuation of CRP 800, concentrating on recent developments.

809 (919) Informal Study in Urban and Regional Theory Fall or spring. Credit as assigned. Staff.

Planning Theory and Politics

510 (721) Introduction to Planning Theory Spring. 3 credits.

P. 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 institutional contexts stressing the impact of alternative organizational and political models on social decision processes.

611 (720) Policy Planning and Collective Choice Fall. 4 credits.

D. F. Williams.

A seminar in the collective choice approach to the study and use of planning theory. Special emphasis on the relationships between planning theory, public choice, public policymaking, and the outcomes of public policies.

[612 (650) Urban Politics and Planning Spring. 3 credits. Not offered 1977-1978.

I. R. Stewart.

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

710 (821) Politics of the Planning Process Fall. 4 credits.

P. Clavel.

42 City and Regional Planning

Analysis of planning and political institutions in selected subjects and policy areas, relating national and subnational levels. Subjects will be drawn from such areas as environmental control and use policy, industrial development, transportation, and community development. Theories of planning and politics are compared for their analytical usefulness in these areas.

711 (820) Planning and Organizational Theory

Fall or spring. 4 credits. Prerequisite: second-year graduate standing.

P. Clavel.

A seminar examining organizational and administrative models relevant to plan formation and implementation. Applications are made to such programs as community development, regional administration, urban renewal, and land-use control.

718 Fieldwork/Workshop in Planning Theory and Politics

Fall or spring. Credit as assigned.

Staff.

Work on problems in planning theory and politics in a field and/or laboratory setting.

719 Special Topics in Planning Theory and Politics

Fall or spring. Credit as assigned.

Staff.

810 (920) Advanced Planning Theory

Fall. 2 credits. Prerequisite: 500 or 710.

B. G. 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.

819 Informal Study in Planning Theory and Politics

Fall or spring. Credit as assigned.

Staff.

Quantitative Methods and Systems Analysis

520 (730) Mathematical Concepts for Planning

Fall. 1, 2, 3, or 4 credits. Prerequisite: permission of instructor.

Staff.

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 each. Students may register for any or all of these topics. Mathematics 201, Mathematics for the Social Sciences, and Sociology 420, Mathematics for Sociologists, are acceptable substitutes.

521 (736) Introduction to Computers in Planning

Fall. 3 credits.

Staff.

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.

620 (733) Planning Analysis

Spring. 4 credits.

Prerequisite: 621.

B. G. Jones.

A survey of commonly used techniques for analyzing various aspects of subnational socioeconomic systems emphasizing planning applications.

621 (731) Statistical Analysis for Planning

Spring. 3 credits. Prerequisites: 520 or equivalent

and permission of instructor.

Staff.

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.

622 (751) Planning Information Systems

Fall or spring. 3 credits. Prerequisite: 521 or equivalent.

S. Saltzman.

Considers the design and use of computer-based information systems for planning and policy analysis, including conventional data processing and advanced data base systems. Technical aspects in the design and structure of such information systems are introduced along with a variety of applications.

720 (830) Quantitative Techniques for Policy

Analysis and Program Management

Fall. 4 credits.

D. Lewis.

An examination of selected analytical techniques used in the planning and evaluation of public policy and public investments. Topics covered include simulation modeling, benefit-cost and cost effectiveness analysis (including capital budgeting), and optimization strategies.

721 (832) Simulation in Planning and Policy Analysis

Fall or spring. 3 credits. Prerequisites:

621 and 521 or equivalent.

S. Saltzman.

The design and use of simulation models in planning and policy analysis. Various approaches drawn from discrete stochastic simulation, econometric simulation, microanalytic simulation, and urban dynamics will be evaluated. Applications in design, land use, regional development, and social policy will be considered. Students will run their own programs on the Cornell computer.

728 Fieldwork/Workshop in Systems Planning and Analysis

Fall or spring. Credit as assigned.

Staff.

Work on applied systems planning problems in a field and/or laboratory setting.

729 Special Topics in Quantitative Methods and Analysis

Fall or spring. Credit as assigned.

Staff.

820 (930) Seminar in Methods for Planning and Policy Analysis

Fall or spring. 3 credits.

Prerequisite: permission of instructor.

Staff.

A review and critical analysis of various analytical and computer methods of actual and potential use in planning and in the analysis of public policy. The material covered will vary each semester, depending upon the interests of the members of the seminar.

829 (839) Informal Studies in Quantitative

Methods and Analysis Fall or spring. Credit as assigned.

Staff.

Regional Development Planning

[430 (460) Regional Economic Development

Fall. 4 credits. Prerequisite: 500. Not offered 1977-78.

Staff.

A focus on problems of and theories about development of lagging, underdeveloped, or poor regions in industrial nations, with emphasis on planning implementation.]

530 (860) Introduction to Regional Development

Planning Fall. 3 credits. Prerequisite: 500.

Staff.

An introduction to the history, theories, methods, and processes of regional development planning. Will also focus on planning for specialized functions in various public agencies.

630 (823) Regional Development Administration

Fall or spring. 4 credits.

P. Clavel.

A seminar on administrative institutions relevant to regional development policies, with attention to the United States, Western Europe, and Third World countries. Approaches to theory, measurement, and spatial distribution of institutions are covered with reference to the design of effective programs.

730 (818) Regional Planning Methods

Fall. 4 credits. Prerequisites: 620, basic economics, some calculus, and statistics.

S. Czamanski.

Study of problems in the formulation and testing of scientific hypotheses. Main focus will be depressed or underdeveloped regions, with some discussion of past and current work of participants and their dissertations. Topics covered include construction of models, main estimating techniques, and discussion of some applied regional models.

738 Fieldwork/Workshop in Regional Development Planning

Fall or spring. Credit as assigned.

Staff.

Work on applied problems in regional development planning in a field and/or laboratory setting.

739 Special Topics in Regional Development Planning

Fall or spring. Credit as assigned.

Staff.

830 (822) Seminar in Regional Interindustry Analysis and Programming

Fall. 3 credits. Prerequisites: basic economics, elementary matrix algebra.

S. Czamanski.

Advanced treatment of regional industrial structure, methods of construction and applications of input-output, linear programming, saturation and dynamic optimization. Examples of recent applications of the techniques discussed to the solution of actual regional problems will be analyzed.

[831 (932) Techniques of Regional Accounting

Fall. 3 credits. Prerequisites: 620 and Econ 312 or equivalent. Not offered 1977-78.

Staff.

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, is emphasized as well as methods of estimating flows between regions, such as balance of payment accounts.]

832 (915) Location Theory

Fall. 3 credits. Prerequisites: 500, 620, and Econ 311-312, or equivalent.

W. Isard.

Traditional Weberian location doctrine; transport orientation, labor orientation, agglomeration, and urban rent theory will be examined. Interregional trade and market and supply area analysis will be treated. Particular attention paid to Loschian and Christaller systems of urban places.

833 (933) Methods of Regional Analysis

Spring. 3 credits.

W. Isard.

Advanced applications of interregional and regional input-output and linear programming techniques to development problems. Applications of spatial interaction and growth (intertemporal) models to the analysis of urban and multiregional systems, with particular reference to environmental quality management.

839 Informal Study in Regional Development Planning

Fall or spring. Credit as assigned.

Staff.

Social Policy Planning

440 (434) The Impact and Control of Technological Change

(Cosponsored by the Program on Science, Technology, and Society) Spring. 4 credits. Visiting speakers and sections.

D. Nelkin, J. Milch.

Social, environmental, and economic implications of technological change in the context of present policies and strategies of control. Several specific cases will be considered in detail, followed by investigation of the problems of a modern technological society. Alternative political-economic solutions will be explored.

441 (425) Theories and Strategies of Social Change

Spring. 4 credits.

C. Hershey.

Broadly concerned with social change on both a theoretical and action level. The principal thrust will be to evaluate the possibilities for major social, cultural, and political changes within an emergent postindustrial society, including a critical evaluation of several current change strategies and an articulation of several alternative futures.

442 (457) The Public Economy of Urban Areas
Spring. 3 credits.

D. F. Williams.

An examination of the structure, function, and impact of the local public sector with specific emphasis on fiscal interactions in metropolitan areas.

540 (770) Introduction to Social Policy Planning
Fall. 4 credits.

C. Hershey.

An introduction to theories, methods, and processes of social policy planning. Recent social policies will be examined within the context of the evolution of the welfare state and the development of social science methodologies for policy analysis.

541 (533) The Politics of Technical Decisions I
(Cosponsored by the Program on Science, Technology, and Society) Fall. 4 credits.

D. Nelkin, J. Milch.

Political aspects of decision making in areas traditionally regarded as technical. Subjects will include the origins and characteristics of "technical politics," the role of experts in government, and the problem of expertise in a democratic system. We shall explore alternatives to current decision-making procedures.

542 (752) The Politics of Technical Decisions II
(Cosponsored by the Program on Science, Technology, and Society) Spring. 4 credits. Prerequisite: 541 or permission of instructors.

D. Nelkin, J. Milch.

Continuation of fall semester, focusing on decision making in several technical policy areas. Students will develop individual or group research projects focusing on policy decisions with a significant technical component and a considerable public impact.

640 (753) Critical Social Theory in Planning
Fall or spring. 4 credits. Prerequisite: for seniors and graduate students with consent of the instructor.

W. Goldsmith.

For students already familiar with "radical" social theory. A review of Marxist methods and analysis of controversies in critical theory: problems of capital accumulation, the role of the state, the role of the intellectual, and alternative paths to socialism, focusing on the industrialized West.

641 (824) Organizational Change and Public Service Delivery Systems Fall. 4 credits.

C. Hershey.

An examination of the operation of the urban political system and policymaking process with particular emphasis on the service outcomes of local public bureaucracies in the education, health, welfare, manpower, social service, and police fields.

740 (871) Seminar in Social Policy Research and Analysis Spring. 4 credits.

C. Hershey.

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

742 (856) Urban Public Service Planning I Fall. 3 credits.

D. F. Williams.

Analysis of the function, distribution, and impact of urban public services. Special emphasis will be on the problems of planning and resource allocation in nonmarket systems.

743 (857) Urban Public Service Planning II
Spring. 3 credits. Prerequisite: 742.

D. F. Williams.

A seminar on application of selected methods of urban public service planning and analysis. Emphasis on analysis of real and simulated public service planning situations.

744 (854) Urban Financial Planning and Management Spring. 3 credits.

R. Schramm.

This course introduces the theory and practice of financial management and planning in urban government, including budgeting, capital expenditures, management of short-term assets, borrowing, taxation, and intergovernmental finance. Case studies and problem sets that place the student in a decision-making context are emphasized.

745 (855) Urban Fiscal Analysis Fall. 3 credits.
Prerequisite: 744 or course in public finance.

R. Schramm.

This course introduces government financial information (fund accounting, financial statements, and budgets) and uses this information and other data to identify major fiscal problems faced by the city and their causes. Alternative solutions to urban fiscal problems are evaluated using this analysis.

748 Fieldwork/Workshop in Social Policy Planning Fall or spring. Credit as assigned.

Staff.

Work on applied problems in social policy planning in a field and/or laboratory setting.

749 Special Topics in Social Policy Planning
Fall or spring. Credit as assigned.

Staff.

849 (879) Informal Study in Social Policy Planning Fall or spring. Credit as assigned.

Staff.

Urban Development Planning

550 (510) Introduction to Urban Development Planning Fall. 4 credits. Upperclass undergraduates admitted by permission of instructors.

J. W. Reys, I. R. Stewart.

A survey of the history of American planning, major problems of city development, and solutions advanced to improve the urban condition. Major emphasis is on physical development and related social, political, economic, and legal matters.

[551 (531) Suburbanization and Metropolitan America Fall. 3 credits. Prerequisite: permission of instructor. Not offered 1977-78.

I. R. Stewart.

Seminar concentrates on the major issues in suburban

development, metropolitan growth analysis, and the role of new communities in accommodating expected future population.]

552 (522) Urban Land-Use Planning I Fall.
3 credits.

S. Stein.

Surveys, analyses, and plan-making techniques for guiding physical expansion and renewal of urban areas; location requirements, space needs, inter-relationships of land uses. Emphasis on residential, commercial, and industrial activities and community facilities; housing and neighborhood conditions.

553 (523) Urban Land-Use Planning II Spring.
2 credits. Prerequisite: 552 or permission of instructor.
S. Stein.

In-depth explorations of some or all of the following: neighborhoods, central business districts, shorelines and waterfronts, new towns, planned-unit developments, high-density housing, highway-oriented uses, and others. Lectures, seminars, and field exercises.

554 (540) Introduction to Environmental Planning Design Fall. 3 credits. For graduate planning students; others by permission of instructor.
K. Grey.

Planning and design of built environments as an aesthetic reflection of comparative values and needs. Lectures, seminars, and readings will explore basic concepts and issues related to architecture, landscape, urban design, and urban planning.

555 (541) Environmental Planning and Design Workshop Spring. 4 credits. Prerequisite: 554 or permission of instructor.

K. Grey.

Studio-lecture course examining planning and design problems related to the built environment. An understanding of the design process will be developed and graphic communication techniques explored. No previous graphics experience required.

651 (631) Urban Land Policy and Programs. Fall. 3 credits. Prerequisite: 653 or permission of instructor.

J. W. Reps.

Consideration of major problems of urban land control and management and possible solutions. Subjects for discussion include taxation, compensation and betterment, large-scale public land acquisition, subsidies and incentives, and acquisition of developmental rights.

652 (612) The Urban Development Process Spring. 2 credits. Prerequisite: 550 or permission of instructor. Enrollment limited.

J. W. Reps.

Examination of the goals, strategies, methods, and achievements of major participants in the urban land and building market; land owners, speculators, real estate brokers, developers, bankers, lawyers, non-profit builders, and government agencies.

653 (632) Legal Aspects of Land-Use Planning Spring. 3 credits. Prerequisite: 550 or permission of instructor.

B. Kelly.

Survey of leading cases and legal concepts in land-use planning, with particular attention to zoning, subdivision control, condemnation, growth control, and environmental issues.

654 Environmental Planning and Design—Special Problems Fall or spring. Credit as assigned. Staff.

[655 (640) Seminar in Urban Design Fall.
3 credits. Not offered 1977-78.

S. Stein.

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

657 (667) Planning and Development Workshop Fall or spring. Credit as assigned.
W. Boyar.

750 (738) Urban Land Policy and Programs—Special Problems Fall or spring. Credit as assigned. Staff.

751 (761) Professional Practice Seminar Spring. 2 credits.

S. Stein and visitors.

A seminar covering various aspects of urban planning practice in both the public and private sectors, including the roles and careers for professional planners; the planning function within the structure of government; consulting; funding and budgets; professional societies; professional ethics; related professionals; and other topics.

758 Fieldwork/Workshop in Urban Development Planning Fall or spring. Credit as assigned. Staff.

Work on applied problems in urban development planning in a field and/or laboratory setting.

759 Special Topics in Urban Development Planning Fall or spring. Credit as assigned. Staff.

859 Informal Study in Urban Development Planning Fall or spring. Credit as assigned. Staff.

Special Interprogram Topics: History and Preservation

460 (400) Introduction to the History of Urban Planning (also Arch 343) Fall. 4 credits.

W. W. Cummer, S. W. Jacobs, J. W. Reps.

Survey of urban planning in Western civilization from the Greeks and Romans, through medieval, renaissance, and modern Europe, to colonial and nineteenth-century America. Lectures, discussion sessions, readings, and term paper.

461 (404) Methods of Archival Research (also Arch 542) Spring. 3 credits.

K. C. 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.

560 (845) Documentation for Preservation Planning (also Arch 546) Fall or spring. 2 credits.
S. W. Jacobs, staff, visiting lecturers.
Methods of collecting, recording, processing, and analyzing architectural and cultural survey materials.

561 (575) Historic Preservation Planning Workshop Fall. 4 credits.
S. Stein.
Preparation of surveys, analyses, plans, and programs for preservation of historic areas of small, medium, or large communities. Fieldwork emphasized, working with real "clients" in their communities.

562 (844) Design and Conservation (also Arch 545) Fall. 2 credits.
B. G. Jones, S. W. Jacobs.
The rationale for and methods of using existing cultural and aesthetic resources in the planning and design of regions and cities.

660 (504) Seminar in the History of American City Planning Fall or spring. 3 credits. Prerequisite: 460, Arch 343, or permission of instructor.
J. W. Reps.

661 (576) Historic Preservation Planning Workshop—Advanced Fall or spring. Credit variable. Prerequisite: 561.
S. Stein.
In-depth exploration of special problems in historic preservation planning focusing on specific issues in existing towns, villages, cities, or regions.

[662 (602) Seminar in American Urban History] Spring. 3 credits. Prerequisite: permission of instructor. Not offered 1977-78.
I. R. Stewart.
Seminar in the historical evolution of the American city. Emphasis on factors in urban growth, the process of urbanization, urban reform movement, and intellectual and social responses to the city.]

768 Fieldwork/Workshop in History and Preservation Fall or spring. Credit as assigned.
Staff.
Work on applied problems in history and preservation planning in a field and/or laboratory setting.

769 (709) Special Topics in History and Preservation Fall or spring. Credit as assigned.
Staff.

869 (679) Informal Study in History and Preservation Fall or spring. Credit as assigned.
Staff.

Special Interprogram Topics: International Studies

570 (777) Low-Cost Housing for Developing Nations Spring. 3 credits.
D. F. Williams.

A course on dimensions of the practice and problems of production, location delivery, and use of shelter for low-income population groups in urban centers, peri-urban squatter settlements, and rural regions of developing nations.

670 (863) Regional Planning and Development in Developing Nations Fall. 4 credits. Prerequisite: second-year graduate standing.
W. W. Goldsmith.

Extensive case studies of development planning will be analyzed. Focus will be on a Marxist critique of the process of regional development through urbanization and in particular 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.

770 (963) Planning Techniques for Developing Regions and Small Nations Spring. 4 credits.
Prerequisite: 670.
W. W. Goldsmith.

Simulation of the work of a consulting team's proposals and analyses of policies for development of various sectors and problem areas, such as manufacturing, agriculture, health, education and services, infrastructure, urbanization, and exports. The final product will be a set of plans. Requirements include minimal reading, extensive research on a topic of interest, an interim report, and a written final report.

771 (862) Seminar on Science and Technology Policy in Developing Nations Spring. 4 credits.
D. Lewis.

An examination of the issues facing developing countries as they endeavor to use technology in the pursuit of their national goals. Topics covered include alternative choices of technology and the associated impacts, the role of multinational corporations, government policymaking institutions, manpower development and utilization strategies, and policy instruments.

772 (865) Seminar in Policy Planning in Developing Nations: Technology Transfer and Adaption Fall. 2 credits.
D. Lewis.

An exploration of the international transfer of technology to developing nations and the policies used to guide this process. Topics covered include the role of foreign aid and multinational corporations, economic rationale for choice of appropriate technology, and social benefit-cost analysis. Case studies emphasized.

778 Fieldwork/Workshop in Planning for Developing Regions Fall or spring. Credit as assigned.
Staff.

Work on applied problems in planning for developing regions in a field and/or laboratory setting.

779 Special Topics in Planning for Developing Regions Fall or spring. Credit as assigned.
Staff.

879 Informal Studies in Planning for Developing Regions Fall or spring. Credit as assigned.
Staff.

Special Interprogram Topics: Environment/Health, Housing, and Institutional Planning

[580 (740) Introduction to Planning Institutions] Fall. 3 credits. Not offered 1977-78.
P. Clavel.

A survey of contemporary organizational forms and political forces facilitating and inhibiting the development of the planning profession at the city, state, and regional levels. The focus is on subnational planning in the United States, but the national context and other nations are dealt with where appropriate.]

[581 (550) Seminar in Housing and Urban Development] Fall. 3 credits. Not offered in 1977-78.
I. R. Stewart.

An introductory course reviewing the evolution of governmental policy and programs in the area of housing, urban renewal, and development. Subjects will involve both theory and case-study analyses of recent American experience in these fields.]

[582 (561) Administrative Planning] Spring. 3 credits. Prerequisite: permission of instructor. Not offered 1977-78.
K. C. Parsons.

An analysis of interactive elements in the planning process for colleges and universities. Topics include organizational and administrative theory, management objectives, evaluation, accountability/quantity and quality budgeting, and program planning. Governmental constraints will be stressed.]

585 (452) Introduction to Environmental Health Issues Spring. 3 credits.
B. G. Jones.

An examination of concepts and issues in environmental health, particularly as they relate to planning for health and medical care delivery systems, economic development, and other policy issues.

680 (872) Housing and Urban Planning Fall. 3 credits.
D. F. Williams.

Examination of methods and strategies for planning, policy formation, and resource allocation in the urban housing sector. Emphasis on the housing element of urban plans, housing sector analysis, and analysis of the impact of development and development controls on housing costs.

681 (873) Housing Analysis and Research Spring. 3 credits. Prerequisite: 680.
D. F. Williams.

Intensive concentration on selected problems and methods of housing analysis, empirical housing research, and national and subnational housing policy formation.

685 (875) Environmental Epidemiology Spring. 3 credits. Prerequisite: 520.
P. Brandford.

Introduction to epidemiological methods. Emphasis on the detection of changes in health status associated with changes in environmental conditions and the significance of these findings for environmental health planning.

785 (853) Planning and Evaluation of Environmental Health Programs and Projects Spring. 3 credits. Prerequisite: second-year graduate standing.
P. Brandford.

The major focus of this seminar shall be an examination of the use of quantitative methods and economic analysis as aids to social decision making for action in the area of environmental health. Applications of these methods to the study of particular problems of environmental health.

786 (852) Environmental Health Planning Fall. 2 credits. Prerequisite: second-year graduate standing.
P. Brandford.

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.

787 (877) Health Systems Planning Fall. 3 credits.
P. Brandford.

This seminar is intended to increase understanding of issues, institutions, politics, economics, and social elements involved with planning and administration of health problems. Special emphasis will be placed on planning techniques and methodologies. Visiting practitioners in the field will be invited to make presentations.

788 Fieldwork/Workshop in City and Regional Planning Fall or spring. Credit as assigned.
Staff.

Work on applied planning problems in a field and/or laboratory setting.

789 Special Topics in City and Regional Planning Fall or spring. Credit as assigned.
Staff.

888 Informal Studies in Environmental Health Planning Fall or spring. Credit as assigned.
Staff.

889 Informal Studies in City and Regional Planning Fall or spring. Credit as assigned.
Staff.

Research

790 (890) Professional Planning Colloquium I Fall. 1 credit.
Staff.

791 (891) Professional Planning Colloquium II

Spring. 1 credit.

Staff.

792 (892) Master's Thesis, Project, or Research Paper I

Fall. Credit as assigned.

Staff.

793 (893) Master's Thesis, Project, or Research Paper II

Spring. Credit as assigned.

Staff.

794 (771) Summer Internship in Planning

Summer. 3 credits. Instruction limited to July and August. Graduate students in planning and others by permission.

Staff, visiting lecturers.

Summer internship in a metropolitan area. Full-time work at current salaries, supplemented with evening lectures and discussions two evenings a week and field trips. Program offering dependent on economic conditions and availability of internship jobs.

890 (990) Planning Research Seminar I

Fall. 1 credit.

Staff.

Primarily for doctoral candidates in city and regional planning; others welcome. Presentation and discussion of current problem areas and research by advanced doctoral students, faculty, and visitors.

891 (991) Planning Research Seminar II

Spring. 1 credit.

Staff.

892 (992) Doctoral Dissertation I

Fall. Credit as assigned.

Staff.

893 (993) Doctoral Dissertation II

Spring. Credit as assigned.

Staff.

Landscape Architecture

The Landscape Architecture Program at Cornell is jointly sponsored by the College of Architecture, Art, and Planning and by the College of Agriculture and Life Sciences (in association with the Department of Floriculture and Ornamental Horticulture).

Landscape Architectural Design

Sequence Courses

***231 Design I: Basic Landscape Architectural**

Design Fall. 5 credits. Open to undergraduate and graduate landscape architecture majors only. Fee charged.

Lec, M 12:20; studio M W F 1:25-4:25.

T. H. Johnson.

A sequential introduction to the principles of landscape architectural design. The course will deal with graphics and drafting, two- and three-dimensional design, color, abstraction, form, space and spatial sequence, uses of plant material, and the site planning

design process. This is the first course in a sequence of six-studio courses required for specialization in landscape architecture. Drafting equipment and supplies required for this course will cost approximately \$75. (Drafting equipment will be used throughout the six-studio sequence.)

***232 Design II: Basic Landscape Architectural**

Design Spring. 5 credits. Prerequisite: LA 231. Fee charged.

Lec, W 9:05; studio, M W F 10:10-12:35.

M. I. Adleman.

A continuation of the exposure to design process and problem solving with an emphasis on the development of site design and graphic skills. Studio work will include exercises dealing with site analysis, the organization of spaces and structures, and the interrelationships of vehicular and pedestrian circulation, parking, open space, earth form, water, and vegetation.

***331 Design III: Intermediate Landscape Design**

Fall. 5 credits. Prerequisite: LA 232. Fee charged.

Lec, F 9:05; studio, M W F 10:10-12:35.

P. J. Trowbridge.

Application of planning and design techniques to a variety of environmental problems. Timely issues will be investigated and site development problems at several scales and land-use intensities will be examined. A five-day field trip is required and expenses are estimated at approximately \$100.

***332 Design IV: Intermediate Landscape Design**

Spring. 5 credits. Prerequisite: LA 331. Fee charged.

Lec, M 12:20; studio, M W F 1:25-4:25.

T. H. Johnson.

An involvement with diverse projects which incorporate emerging visual and resource assessment methodologies within the site planning design process.

***431 Design V: Advanced Landscape Design**

Fall. 5 credits. Prerequisite: LA 332. Fee charged.

Lec, M 12:20; studio, M W F 1:25-4:25.

M. I. Adleman.

Studio work will deal with the design of a variety of complex community service projects within the region and is intended to reinforce acquired problem solving, design, and site construction skills. A five-day field trip is required and expenses are estimated at approximately \$100.

***432 Design VI: Advanced Landscape Design**

Spring. 5 credits. Prerequisite: LA 431. Fee charged.

Lec, W 9:05; studio, M W F 10:10-12:35.

P. J. Trowbridge.

An intensive application of inventory and analysis methods to timely problems in both urban and rural environments. Several documentation formats will be investigated including computer mapping techniques.

581 Landscape Planning and Design Workshop

Fall. 5 credits.

Lec, M 12:20; studio, M W F 1:25-4:25. L. J. Mirin.

*Courses offered by the College of Agriculture and Life Sciences, in association with the Department of Floriculture and Ornamental Horticulture.

Analysis, planning, and design response to problems of environmental impact. Traditional and advanced techniques of landscape architecture applied to study of natural and cultural systems and processes.

889 Thesis Research and Preparation in Landscape Architecture Fall or spring. Credit and time to be arranged. Prerequisite: candidate for Master of Landscape Architecture degree and permission of the graduate field members concerned. Staff.

Nonsequence Courses

*102 Introduction to Landscape Architecture

Fall or spring. 3 credits.

M W F 9:05. R. L. Dwelle.

The scope and principles of site planning are explored through the use of lectures, movies, and slides, intended to expand awareness of the design potential of the outdoor environment. Landscape architects and representatives of related fields are regularly scheduled as guest lecturers.

***201 Residential Landscape Design I** Fall or spring. 3 credits. Limited to 15 students. (Not open to landscape architecture majors.)

Lec, M 12:20; studio, M W 1:25-4:25. R. L. Dwelle. An introduction to landscape design with application to residential and other small-scale site planning. Projects in the studio will emphasize basic design process, design principles, and graphics relating to site development. This course and LA 202 are particularly directed to students in the Department of Floriculture and Ornamental Horticulture and others who may plan to become involved with various aspects of the landscape and nursery industries.

***202 Residential Landscape Design II** Fall or spring. 3 credits. Limited to 15 students. (Not open to landscape architecture majors.) Prerequisites: Flor 213, LA 201 (or equivalent), and permission of instructor.

Lec, T 12:20; studio, T Th 1:25-4:25. R. L. Dwelle. Advanced involvement with site design on residential and other small-scale projects. Emphasis will be on site organization, form, construction materials, details, and planting design.

***491 Plants and Design** Fall. 3 credits. Prerequisites: Flor 313, LA 232, and permission of instructor.

Lec, T Th 9:00; studio, Th 10:10-12:05.

M. I. Adleman.

Advanced studies in planting design involving design principles relating to the uses of plant materials, interrelationships of plants in landscape composition, horticultural requirements and procedures related to plant selection, transplanting, and maintenance.

*555 Independent Study in Landscape

Architecture Fall or spring. 1 to 3 credits as assigned. May be repeated for credit.

Staff.

Design of independent study projects on special topics by individuals or small groups. Open to juniors, seniors, and graduate students in the Landscape

Architecture Program with permission of the departmental member directing the study.

583 Urban Landscape Planning and Design

Fall. 3 credits.

L. J. Mirin.

Lectures, discussion, exercises, and field trips examining the principles and techniques of landscape architectural development and conservation of urban open space. Areas studied include arboriculture, street graphics, recreation, design controls and public space and housing.

689 Informal Study in Landscape Planning and Design

Fall or spring. Credit as assigned.

Staff.

See also:

Drawing for Landscape Architects (Flor, Drwg 109)

*Perspective for Landscape Architects (Flor, Drwg 110)

Landscape Architecture Principles, Theory, and History

*211 Introduction to Environmental Design (also Arch 261)

Fall. 2 credits.

Lec, M W 9:05. P. J. Trowbridge, staff, visiting lecturers.

An introduction to the basic principles involved in inventory and analysis techniques as they relate to design implementation in the outdoor environment. Case studies depicting application of these principles at all scales of land planning and design will be presented. The course will include the use of natural determinants in the land planning and design process, the organization of structures and outdoor space, vehicular and pedestrian circulation systems, land form development and grading, water and plants as design materials, site construction materials, and site utilities.

*452 Professional Practice

Spring. 2 credits.

Lec, T 1:25-3:25. T. H. Johnson. Leadership/risk responsibilities of the landscape architect and the administration and management methodologies for implementing these opportunities into programs of professional services.

481 Contemporary Issues in Landscape Architecture

Fall. 2 credits.

Lec, T 11:15. L. J. Mirin.

Recent technological, methodological, and legislative developments are assessed in terms of their probable impact on the practice of landscape architecture.

*572 Regional Landscape Inventories and Information Systems: An International Perspective

Fall or spring. 3 credits. Prerequisite:

*Courses offered by the College of Agriculture and Life Sciences, in association with the Department of Floriculture and Ornamental Horticulture.

basic course in landscape architecture, ecology and systematics, agronomy, and permission of instructor.

T 1:25-3:25. A. S. Lieberman.

Reading-seminar course exploring major current methodologies, approaches, academic and research centers for landscape inventory and analysis, and supporting land-use and natural resource information systems. Case studies in regional landscape planning in North America, Europe, Australia, and the Middle East will be given attention. Primarily for graduate students and upperclass students in landscape architecture. Also open to students in architecture, city and regional planning, ecology, international studies, international agriculture, natural resources, and environmental horticulture.

585 Historic Development of Landscape Architecture Spring. 3 credits.

Lec, T Th 11:10. L. J. Mirin.

The landscape architectural tradition, from classical times to the present, is examined as a reflection of diverse influences that have generated physical modifications of outdoor space. Recognition, through slide-lecture, of the principles and techniques inherent in noted examples of the altered environment is emphasized.

Landscape Materials and Construction

***242 Site Construction I** Spring. 4 credits.

Prerequisite: permission of instructor.

Lec, M F 9:05; studio, T Th 9:05-11:15.

P. J. Trowbridge and M. I. Adleman.

Lectures, short exercises, and projects dealing with land-form design and the preparation of grading plans, calculation of earthwork, and the lay-out of circulation systems, parking, and site utility systems.

***341 Site Construction II** Fall. 4 credits.

Prerequisite: permission of instructor.

Lec, T Th 1:30-2:30; studio, T Th 2:30-4:30.

T. H. Johnson.

The nature of construction materials and methods of construction employed by landscape architects to implement project design proposals. Course process includes field trips, lab demonstrations, lectures, and studio work on models, details and a construction documentation package for a design project.

See also:

***Woody Plant Materials for Landscape Use (Flor 313)**

*Courses offered by the College of Agriculture and Life Sciences, in association with the Department of Floriculture and Ornamental Horticulture.

Cornell University

Register

University Administration

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Dale R. Corson, Chancellor of the University
David C. Knapp, University Provost
Theodore Cooper, Dean of the Medical College and
Provost for Medical Affairs
William G. Herbster, Senior Vice President
Mark Barlow, Jr., Vice Provost
Constance E. Cook, Vice President for Land-grant
Affairs
W. Donald Cooke, Vice President for Research
June M. Fessenden-Raden, Vice Provost
William D. Gurowitz, Vice President for
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Samuel A. Lawrence, Vice President for Financial
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E. Hugh Luckey, Vice President for Medical Affairs
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Richard M. Ramin, Vice President for Public Affairs
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Neal R. Stamp, University Counsel and Secretary
of the Corporation

College Administration

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College
Alexander Kira, B.Arch., M.R.P., Associate Dean
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Charles W. Pearman, B.Arch., Associate Dean for
Admissions and Financial Aid
Henry W. Richardson, B.Arch., M.Arch., M.R.P.,
Associate Dean for Minority Student Affairs
Allan A. Lentini, B.E.E., M.B.A., M.A., Ed.D.,
Director of Administrative Services
M. Sophie Newhart, Registrar
Betty Gangle, Accountant
Margaret Webster, Slide Curator

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M. Arthur Gensler, Jr.
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Walter McQuade
Richard A. Meier
Nathaniel Owings
Joel Perlman
Robert Piper
Elsie Dinsmore Popkin
Courtney Riordan
Erik A. Svenson
Ervin H. Zube

Faculty

Architecture

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Professor of Architecture; Chairman
Stuart M. Barnette, B.S. in Arch., Professor of
Architecture, Emeritus
Ludlow D. Brown, M.Arch., Professor of Architecture,
Emeritus
Thomas H. Canfield, B.S. in Arch., Professor of
Architecture, Emeritus
Gilmore D. Clarke, B.S., L.H.D., Professor of
Landscape Architecture, Emeritus
Peter M. Cohen, B.A., M.Arch., Adjunct Associate
Professor
Ralph Crump, B.Arch., Associate Professor of
Architecture
W. Wilson Cummer, B.A., M.A., Ph.D., Assistant
Professor of Architecture
Michael D. Dennis, B.Arch., Associate Professor of
Architecture
Werner Goehner, M.Arch., Assistant Professor of
Architecture
Donald P. Greenberg, B.C.E., Ph.D., Professor of
Architecture
Keith H. Grey, B.Arch., L.Arch., M.U.D., Assistant
Professor of Architecture and Planning
Martin Harms, B.Arch., A.R.I.B.A., Assistant Professor
of Architecture

John A. Hartell, B.Arch., Professor of Architecture, Emeritus
 George Hascup, B.Arch., Assistant Professor of Architecture
 Lee H. Hodgden, B.S.Arch.Eng., M.Arch., Adjunct Associate Professor
 Stephen W. Jacobs, A.B., M.Arch. M.F.A., Ph.D., Professor of Architecture
 Burnham Kelly, A.B., M.C.P., J.D., Professor of Planning, Emeritus
 Alexander Kira, B.Arch., M.R.P., Professor of Architecture; Associate Dean
 Urszula Lesnikowski, B.Arch., M.A., M.U. in Arch., Assistant Professor of Architecture
 Wojciech G. Lesnikowski, M.A., M.U. in Arch., Associate Professor of Architecture
 Jacqueline Livingston, B.A., M.A., Assistant Professor
 James S. Loveall, B.Arch., M.Arch. in U.D., Adjunct Assistant Professor of Architecture
 Robert D. MacDougall, B.Arch., Ph.D., Assistant Professor of Architecture
 Archie Mackenzie, B.Arch., Assistant Professor of Architecture
 John Miller, B.A., M.A., Visiting Critic
 Leonard Mirin, A.B., M.L.A., Assistant Professor of Landscape Architecture
 Christian Otto, B.A., M.A., Ph.D., Associate Professor of Architecture
 Charles W. Pearman, B.Arch., Professor of Architecture; Associate Dean of the College of Architecture, Art, and Planning
 Henry W. Richardson, B.Arch., M.Arch., M.R.P., Associate Professor of Architecture; Associate Dean for Minority Student Affairs
 Colin Rowe, B.Arch., M.A., Professor of Architecture
 Francis W. Saul, B.S., M.S., P.E., Associate Professor of Architecture
 John P. Shaw, B.Arch., M.Arch., 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
 O. Mathias Ungers, Dipl.Ing. (Berlin), Professor of Architecture
 Frederick M. Wells, B.Arch., Andrew Dickson White Professor of Architecture, Emeritus
 J. Alan Wells, B.Arch., Associate Professor of Architecture

Art

Zevi Blum, B.Arch., Associate Professor of Art; Chairman
 Stanley Bowman, B.A., B.Arch., M.F.A., Assistant Professor of Art
 Victor Colby, A.B., M.F.A., Professor of Art
 Barbara P. Cooke, B.F.A., M.F.A., Instructor of Art
 Norman D. Daly, B.F.A., M.A., Professor of Art, Emeritus
 Loretta Dunkelmann, B.A., M.A., Assistant Professor of Art
 Kenneth Evett, A.B., M.A., Professor of Art
 John A. Hartell, B.Arch., Professor of Art, Emeritus
 James O. Mahoney, A.B., B.F.A., F.A.A.R., Professor of Art, Emeritus

Gillian Pederson-Krag, B.F.A., M.F.A., Associate Professor of Art. On leave spring 1978.
 Steve Poleskie, B.S., Associate Professor of Art
 Jason Seley, B.A., Professor of Art
 Arnold Singer, Associate Professor of Art
 Jack L. Squier, B.S., M.F.A., Professor of Art
 Haim Steinbach, B.F.A., M.F.A., Assistant Professor of Art
 Phyllis Thompson, B.F.A., M.F.A., Assistant Professor of Art
 Visiting Critics

City and Regional Planning

Sidney Saltzman, B.S., M.S., Ph.D., Professor of Planning; Chairman
 Richard S. Booth, B.A., J.D., Assistant Professor of City and Regional Planning
 V. Wesley Boyar, B.A., M.R.P., Lecturer; Assistant Chairman; Director of Community Services
 Paul Bradford, B.S., M.P.H., Ph.D., Associate Professor of City and Regional Planning
 Pierre Clavel, A.B., M.R.P., Ph.D., Associate Professor of City and Regional Planning and Rural Sociology
 Stanislaw Czarnanski, Lic. es Sc. Comm., Ph.D., Professor of City and Regional Planning
 Nancy Lynn Gilgosh, B.A., M.A., Assistant Professor of City and Regional Planning
 William W. Goldsmith, B.S.C.E., Ph.D., Associate Professor of City and Regional Planning
 Keith H. Grey, B.Arch., M.U.D., Assistant Professor of Architecture
 Cary Hershey, A.B., M.P.A., Ph.D., Assistant Professor of City and Regional Planning
 Walter Isard, B.A., M.A., Ph.D., Visiting Professor of Regional Science, Economics, and Planning
 Barclay Jones, B.A., B.Arch., M.R.P., Ph.D., Professor of City and Regional Planning; Codirector, Program in Urban and Regional Studies
 David B. Lewis, B.S., M.S., Ph.D., Assistant Professor of City and Regional Planning
 Dorothy W. Nelkin, B.A., Professor of Planning
 Kermit C. Parsons, B.Arch., M.R.P., Professor of City and Regional Planning; Dean of the College of Architecture, Art, and Planning
 John W. Reps, A.B., M.R.P., Professor of City and Regional Planning
 Stuart W. Stein, B.Arch., M.C.P., Professor of City and Regional Planning
 Ian R. Stewart, B.A., M.R.P., Ph.D., Assistant Professor of City and Regional Planning
 Darrell F. Williams, B.A., M.A., M.U.P., Ph.D., Assistant Professor of City and Regional Planning

Landscape Architecture

Marvin I. Adleman, B.S., M.L.A., Associate Professor of Landscape Architecture; Program of Coordinator
 Robert L. Dwelle, B.S.L.A., Lecturer in Landscape Architecture
 Thomas H. Johnson, B.F.A., M.L.A., Assistant Professor of Landscape Architecture
 Leonard J. Mirin, A.B., M.L.A., Assistant Professor of Landscape Architecture; Graduate Faculty Representative
 Peter Trowbridge, B.L.A., M.L.A., Assistant Professor of Landscape Architecture

Elected Members of the Faculty Estimated Enrollment, Fall 1977

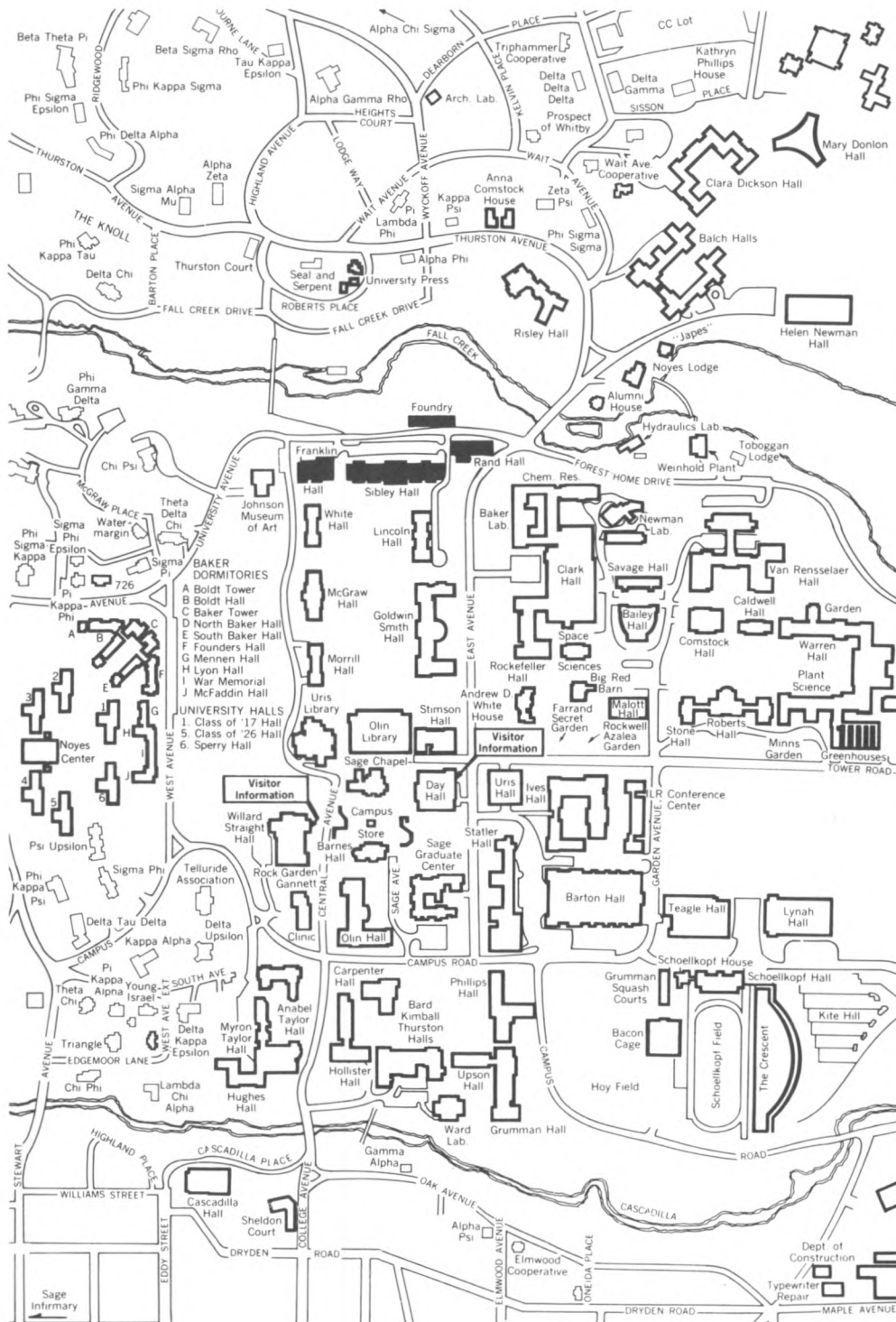
Marvin I. Adleman, B.S., M.S., Associate Professor
in Landscape Architecture

Joseph A. Carreiro, B.S. in Ed., Professor, Chairman,
Design and Environmental Analysis

Irving Lazar, B.A., M.A., Ph.D., Chairman and
Professor, Community Service Education

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

Total Enrollment	680
Undergraduates	480
Architecture	350
Art	130
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Cornell University

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List of Announcements

Following is a list of *Announcements* published by Cornell University to provide information on programs, faculty, facilities, curricula, and courses of the various academic units.

Agriculture and Life Sciences at Cornell
College of Architecture, Art, and Planning
College of Arts and Sciences
Graduate School of Business and Public
Administration
Engineering at Cornell
Graduate Study in Engineering and Applied Sciences
General Information*
Graduate School
School of Hotel Administration
Human Ecology
School of Industrial and Labor Relations:
ILR at Cornell
Graduate Study at ILR
Law School
Medical College (New York City)
Graduate School of Medical Sciences (New York City)
Officer Education (ROTC)
Summer Session
New York State College of Veterinary Medicine

*The *Announcement of General Information* is designed to give prospective students pertinent information about all aspects and academic units of the University.

In addition to the *Announcements* listed above, the University publishes a master catalog of University courses, *Cornell University: Description of Courses*.

Requests for the publications listed above should be addressed to

Cornell University Announcements
Building 7, Research Park
Ithaca, New York 14853.
(The writer should include a zip code.)

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877 17M HU