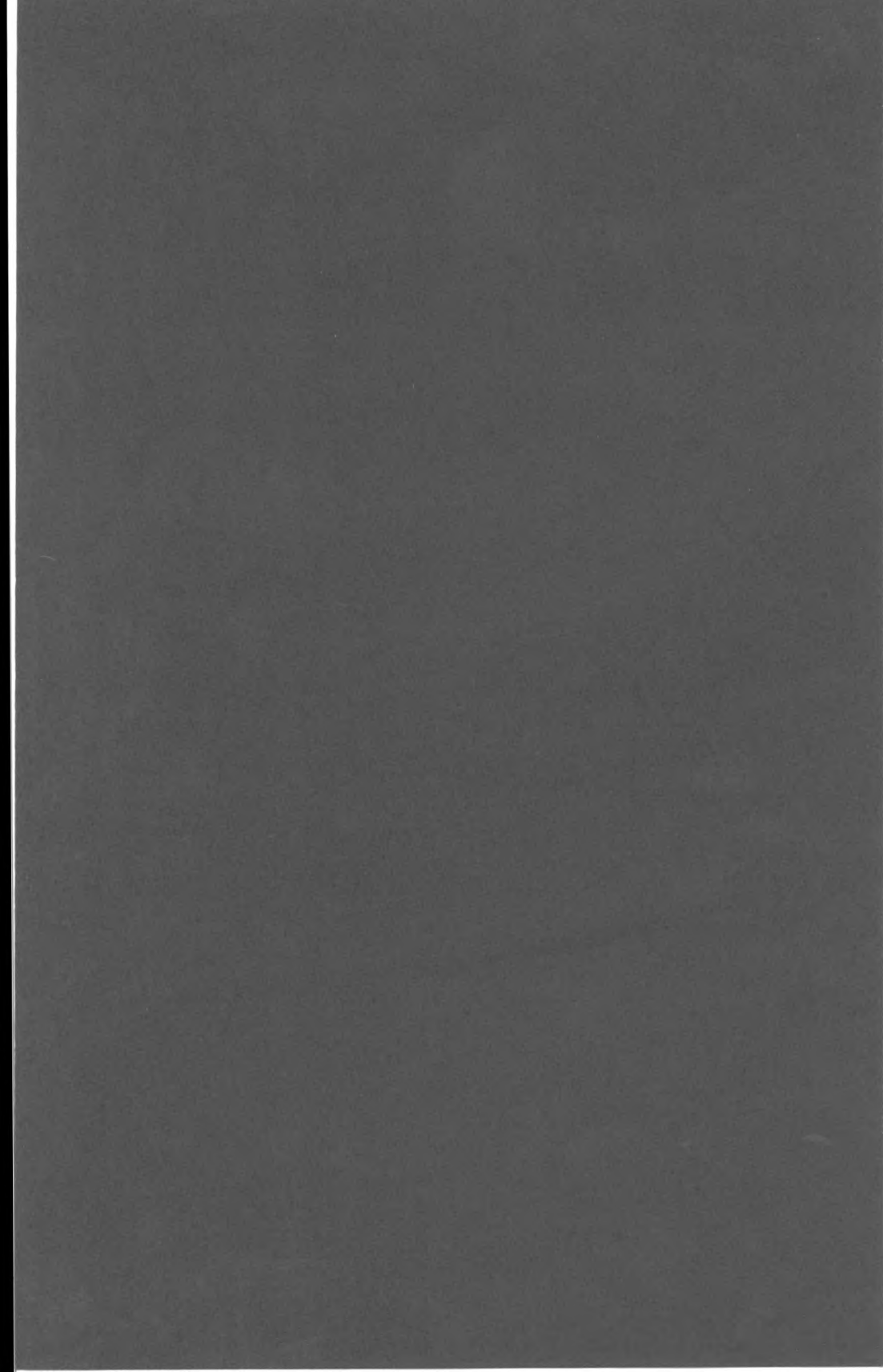




Cornell University
Announcements

College of
Architecture,
Art, and Planning



Cornell University

College of Architecture,
Art, and Planning

1973-74

Cornell University Announcements

Volume 65 of the Cornell University Announcements consists of twenty-one catalogs, of which this is number 14, dated August 15, 1973. Publication dates: twenty-one times a year (four times in August; three times in March and July; twice in January, June, and October; once in April, May, September, November, and December). Publisher: Cornell University, Sheldon Court, 420 College Avenue, Ithaca, New York 14850. Second-class postage paid at Ithaca, New York.

1973-74

Cornell Academic Calendar

Registration, new students
Registration, continuing and rejoining students
Fall term instruction begins
Instruction suspended for Thanksgiving
recess, 1:10 p.m.
Instruction resumes
Fall term instruction ends, 1:10 p.m.
First day of final examinations
Last day of final examinations
Registration, new and rejoining students
Registration, continuing students
Spring term instruction begins
Instruction suspended, 1:10 p.m.
Instruction resumes
Spring term instruction ends, 1:10 p.m.
First day of final examinations
Last day of final examinations
Commencement Day

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

Thursday, August 30
Friday, August 31
Monday, September 3

Wednesday, November 21
Monday, November 26
Saturday, December 8
Thursday, December 13
Saturday, December 22
Thursday, January 24
Friday, January 25
Monday, January 28
Saturday, April 6
Monday, April 15
Saturday, May 11
Friday, May 17
Monday, May 27
Monday, June 3

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

Summer Sessions Calendar, 1974

Registration, three week summer session,*
three-week summer session instruction begins
Registration, eight-week summer session,
eight-week summer session instruction begins
Three-week summer session instruction
suspended
Three-week summer session final examinations,
three-week summer session ends
Registration, six-week summer session
Six-week summer session instruction begins
Six- and eight-week summer sessions
instruction suspended
Six- and eight-week summer sessions final
examinations begin
Six- and eight-week summer sessions end

Wednesday, June 5
Monday, June 17
Monday, June 24
Tuesday, June 25
Wednesday, June 26
Thursday, June 27

Wednesday, August 7
Thursday, August 8
Friday, August 9

*All dates for the three-week session are tentative.

Announcement

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



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 president of the University, Andrew Dickson White, for a patron. He had cultivated an intelligent interest in architecture from boyhood, as he records in his autobiography, and during journeys abroad his "pet extravagance" had been the collection of books and other material relating to it. He gave the new School all that he had accumulated—a large architectural library and several thousand architectural photographs, drawings, casts, models, and other items from all parts of Europe—a collection then almost unique. His gift formed the nucleus of an increasingly useful library and store of illustrative equipment.

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

In 1967, to reflect the independent strength of its three programs, the name of the College was changed to the College of Architecture, Art, and Planning. In 1971 the Department of City and Regional Planning was divided to form a Department of Urban Planning and Development and a Department of Policy Planning and Regional Analysis.

In 1971, the College celebrated the centennial of professional instruction in Architecture. A bronze portrait head of Professor Babcock was placed in the south porch of Sage Chapel to culminate the celebration of the centennial year.

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

The faculty of the College, acting as a division of the Graduate School, has jurisdiction over the advanced professional degrees Master of Architecture, Master of Landscape Architecture, Master of Regional Planning, and Master of Fine Arts. The college also offers programs in the following fields leading to degrees over which the Graduate School has jurisdiction: Architectural Sciences, M.S.; History of Architecture and Urban Development, M.A. and Ph.D.; City and Regional Planning, Ph.D.

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

Early in its development the College set a limit to the number of its students and devised a selective method of admission. It now enrolls over 600 students and has full-time teaching staff of about sixty, supplemented by visiting teachers, part-time lecturers, and assistants. Teachers and students in such proportion mix together freely, and 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 acted on in the form of the curriculum, the methods of teaching, and the extracurricular life of teachers and students.

Architecture

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

While the larger environmental problems are the concern of a number of disciplines, architecture as a profession may be more narrowly defined in terms of those services it performs which characterize its distinct role in giving concrete three-dimensional form to the physical environment. The nature of the field calls for an undergraduate education which establishes a broad understanding of human values and social problems, as well as the theoretical and technical base of professional competence. In meeting these objectives, the undergraduate professional program structures the exploration of a wide range of architectural issues and scales of involvement, and provides the opportunity to develop particular emphasis which may become a basis for specialized studies at the graduate level.

Professional Degree Program

The 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 for those who have identified before matriculation their interest and motivation to enter the field. It therefore incorporates both a general and professional educational base.

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

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

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

Curriculum

<i>First Year</i>	<i>Credit Hours</i>
<i>Fall Term</i>	
Design I 101	4
Introduction to Architecture 131	2
Visual Communication I 151	3
History of Architecture 141	3
Elective (Out of College) or Fine Arts Option ¹	3
Elective (Out of College)	3
	<hr/> 18
<i>Spring Term</i>	
Design II 102	4
Introduction to Architecture 132	2
Visual Communication II 152	3
History of Architecture II 142	3
Elective (Out of College) or Fine Arts Option ¹	3
Elective (Out of College)	3
	<hr/> 18

<i>Second Year</i>	
<i>Fall Term</i>	
Design III 201	4
Architectural Elements and Principles 231	2
Mathematical Techniques 221	2
Introduction to Environmental Science 261	2

¹ One course in fine arts must be taken during the first year.

7 Nonprofessional Alternative Programs

Option (Visual Communication 251 or Fine Arts) ²	3
Elective (Out of College)	3
	—
	16
<i>Spring Term</i>	
Design IV 202	4
Architectural Elements and Principles 232	2
Structural Concepts 222	4
Introduction to Social Sciences in Design 262	2
Option (Visual Communication 252 or Fine Arts) ²	3
Elective (Out of College)	3
	—
	18
<i>Third Year</i>	
<i>Fall Term</i>	
Design V 301-302	6
Building Technology, Materials, and Methods 360	3
Structural Systems I 321	3
Elective Option (In Department)	2
Elective (In College)	3
	—
	17
<i>Spring Term</i>	
Design VI 301-302	6
Environmental Controls I 362	3
Structural Systems II 322	3
Elective Option (In Department)	2
Elective (In College)	4
	—
	18
<i>Fourth Year</i>	
<i>Fall Term</i>	
Design VII 401-402	6
Environmental Controls II 462	2
Elective (In College)	3
Elective (In Department)	2
Elective (In College)	4
	—
	17
<i>Spring Term</i>	
Design VIII 401-402	6
Technological Integration in Design 465	2
The Practice of Architecture 480	2
Elective (In or Out of College)	3
Elective (Out of College)	4
Program Planning for Fifth Year (Required)*	0
	—
	17

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

* Students in Design 401 and 402 elect a studio option in architectural design, urban design, or architectural technology-environmental science each term of the fourth year. The student is expected to take recommended elective courses which relate to the studio concentration.

<i>Fifth Year</i>	
<i>Fall Term</i>	
Architectural Studio 501-502, Thesis 504, or Special Program 505	8
Advanced Seminar in Architecture 630	2
Elective (In or Out of College)	3
Elective (Out of College)	4
	—
	17
<i>Spring Term</i>	
Architectural Studio 501-502, Thesis 504, or Special Program 505	8
Advanced Seminar in Architecture 631	2
Elective (In or Out of College)	3
Elective (Out of College)	4
	—
	17
Total	173

Distribution Requirements

In order to fulfill the College distribution requirement, a student must take two intermediate level courses in architectural history in addition to Architecture 141 and 142, one three-hour course in city and regional planning, and two three-hour courses in fine arts. In-college electives may include courses in the Architecture Department.

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

Transfer Students

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

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 major should apply in writing by February 1st in his second year to the appropriate department chairman. He will be interviewed and informed about acceptance by March 1st.

Programs developing major concentrations in the third and fourth years leading to the non-professional Bachelor of Fine Arts degree after the fourth year include History of Architecture and Urban Development, Design Communications, Urban Planning and Development, and Policy Planning and Regional Analysis. A student attaining the B.F.A. degree can either terminate his studies or apply to a graduate program in his 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 the professional school. The program benefits from a tradition of pioneer work in the history of architecture and urban development which 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.

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 40 hours of history course work must be completed with a grade of C or better. Of these 40 credits, 26 must be in Architectural History and Urban Development with 8 credits obtained in courses above the intermediate level in History of Architecture and Urban Development areas. In addition, 8 credits must be obtained in related fields, i.e., History of Art; Archaeology; Intellectual, Cultural, or Political History; 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 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-hour research course in the fall of their senior year. In the spring there will be a four-credit-hour session during which they will prepare and defend an architectural history presentation or demonstration, or a paper approximately fifty pages long.

Curriculum

Prerequisite: first two years of *Credit Hours*
Bachelor of Architecture Curriculum 70

Third Year

Fall

Fine Art Elective	3
Related Field Courses	4
History of Architecture (Intermediate Level) or History of Urban Development	4
Electives	4
	15

Third Year

Spring

Related Field Courses	4
History of Architecture (Intermediate Level) or History of Urban Development	4
Electives	7
	15

Fourth Year

Fall

History of Architecture (Advanced Level) or History of Urban Development	4
Honors or History related subject	4
Electives	8
	16

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. A student may enter the major after the second year of study in the professional program. The major leads to the B.F.A. degree at the end of the fourth year.

The program is directed toward an applied problem solving approach to the communication requirements peculiar to the design process in general, and to architecture in particular.

Students are encouraged to supplement interdepartment studies through elective courses in fields such as Fine Arts, Drama, Cinema, Music, Creative Writing, etc. In addition, the elective courses offer other channels for concentration, such as in Lighting and Acoustics, Computer Graphics, Optics, Electronics, Mass Communication, Psychology of Perception, and other fields offered by various departments of the University.

Admission to the Major

Entrance to the Design Communication BFA Degree Program is open to students who have successfully completed the first two years of the regular Architecture program, with accumulated credit of 70 hours or more. In addition, each student must have a grade of B or better in each course of the basic Visual Communication sequence: Architecture 151, 152, and 153. Variation from these admission requirements must be requested by petition.

Curriculum

Prerequisite: first two years of Bachelor of Architecture Curriculum *Credit Hours* 70

Third Year

<i>Fall</i>	
Graphic Design I, 451	4
Introduction to Film Making 455	3
Visual Perception and Architecture 665	3
Photography Electives	3
Out-of-College Electives	3
	<hr/>
	16

Third Year

<i>Spring</i>	
Graphic Design II, 452	4
Applied Animation 456	3
Photography Electives	3
In-College Elective	3
Out-of-College Electives	3
	<hr/>
	16

Fourth Year

<i>Fall</i>	
Graphic Display of Complex Information 551*	4
Media Workshop 555*	2
Photography Electives	3
In-College Elective	3
Out-of-College Electives	3
	<hr/>
	15

Fourth Year

<i>Spring</i>	
Environmental Graphics 552*	4
Media Workshop 556*	2
Photography Electives	3
In-College Elective	3
Out-of-College Electives	3
	<hr/>
	15

Total 132

* Subject to change for 1974-75 offering.

Policy Planning and Regional Analysis

The program is designed to provide undergraduate students in architecture, who have completed two years of study, the option to major in Policy Planning and Regional Analysis in their third and fourth years. It is intended to provide students who have already some training in design, with an additional foundation in the social, behavioral, and policy sciences. Students completing the program should be well prepared to undertake graduate work in a variety of fields such as architecture, city and regional planning, public policy or, depending on the concentrations they choose, a number of the social sciences. They should also be well prepared to enter the field of planning at various levels of government as policy planning becomes a more and more integral part of a wide range of public organizations whose programs attempt to address the critical social problems of our time.

Typical kinds of agencies for which graduates of the program might work are those concerned with policy formation, program development, implementation and evaluation of health and mental health services, health facilities, environmental quality control, environmental protection facilities, transportation systems and facilities, income maintenance, manpower and human resource development, educational systems and facilities, housing, economic development, and others. Students considering the program should consult with one of the faculty to discuss career opportunities.

Admission to the Major

Policy Planning and Regional Analysis may be elected as a major subject if the student has completed the first two years of the architecture program with requisite competency as determined by a committee composed of faculty members of the Departments of Architecture and Policy Planning and Regional Analysis.

Requirements

To satisfy the major subject requirement, a minimum of 40 hours of planning course work must be completed with a grade of C or better. Of these 40 credits, 30 must be in the Department of Policy Planning and Regional Analysis. A total of 132 credit hours is required for the degree. Eight courses comprise the core requirements.

Program of Study

<i>Required Courses</i>	<i>Credit Hours</i>
PPRA 410 Introduction to Urban and Regional Theory	4
PPRA 430 Mathematical Concepts for Planning (or equivalent)	1,2,3
PPRA 431 Statistical Analysis for Planning	3

PPRA 433 Planning Analysis	4
PPRA 436 Introduction to Computers in Planning (or equivalent)	3
PPRA 440 Introduction to Urban Planning Theory and Practice (or equivalent)	3
PPRA 470 Introduction to Social Policy	3
PPRA 721 Planning Theory	3

Departmental Electives

A number of electives in both the social and physical planning areas will be open to the student during his two upperclass years to satisfy the planning major requirement. Among these are:

	<i>Credit Hours</i>
PPRA 420 Policy Planning and Collective Choice	3
PPRA 425 Theories and Strategies of Social Change	3
PPRA 441 Field Studies in Urban Policy Planning	
PPRA 452 Introduction to Environmental Health Planning	3
PPRA 457 The Public Economy of Metropolitan Areas	3
PPRA 460 Regional Economic Development	3

Independent Study

A number of independent work courses are available for students interested in pursuing subjects of special interest to them.

PPRA 419 Informal Study in Urban and Regional Theory (credit as assigned)

PPRA 429 Informal Study in Planning Theory and Policy Analysis (credit as assigned)
PPRA 439 Informal Study in Planning Analysis (credit as assigned)

Fieldwork

Students are encouraged to take fieldwork problems providing them with experience in dealing with the problems of Upstate communities. Credit can be awarded by taking PPRA 441 Field Studies in Urban Policy Planning.

During the three month summer period between his third and fourth year, the student would be encouraged to gain the experience of an internship in city and regional planning.

This field placement would be in a planning agency or group and could be supervised by a faculty member. Credit can be awarded, if circumstances warrant, by taking PPRA 442 Internship in Urban Studies and Policy Planning (3-6 credit hours).

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 departmental faculty. Minimum requirements for admission to candidacy for Honors are:

1. A cumulative average of B- or better in all courses;

Possible Programs of Study for Undergraduate Major in Policy Planning and Regional Analysis

<i>Undergraduate Planning Major Interested in Social Planning:</i>	<i>Undergraduate Planning Major Interested in Urban Environmental Policy Planning:</i>	<i>Undergraduate Planning Major Interested in Community Development Planning:</i>
Introduction to Urban and Regional Theory	Introduction to Urban and Regional Theory	Introduction to Urban and Regional Theory
Introduction to Social Policy	Introduction to Environmental Policy	Planning Analysis
Theories and Strategies of Social Change	The Public Economy of Urban Areas	Ghetto Economic Development
Ghetto Economic Development	Regional Economic Development	Regional Economic Development
Urban Social Planning Theory	Field Studies in Urban Policy Planning	Theories and Strategies of Social Change
Internship in Urban Studies and Policy Planning	The Political Economy of Environmental Protection	Field Studies in Planning
Social Science electives	Engineering electives	Social Science electives

A number of other programs can be developed.

11 Nonprofessional Alternative Programs

2. A cumulative average of B or better in all Policy Planning and Regional Analysis courses.

Honor candidates will register for PPRA 490, Undergraduate Honors Research, in both the fall and spring semesters of their senior year for at least three credit hours each semester. In the fall the course will be devoted to research and in the spring the student will prepare and defend a planning project or demonstration, or a paper approximately fifty pages long.

Concentrations

Students will be expected to consult with an adviser to develop a concentrated program of study related to their interests. Departmental courses can be organized into a number of sequences which, when combined with well chosen electives in or out of the college, can build a sound preparation in a particular area. Each specialization can be seen as appropriate to particular types of students, given their backgrounds, majors, and interests. Courses can be added or substituted as appropriate; students are also expected to take a sufficient number of electives to fill degree requirements. The independent study and field work courses noted above may be taken to develop the concentration. For three illustrative sequences, see page 10. A number of others can be developed.

Curriculum

Prerequisite: First two years of Bachelor of Architecture Curriculum Credit Hours
70

Third Year

Fall	
PPRA 410 Introduction to Urban and Regional Theory	4
PPRA 430 Mathematical Concepts for Planning	3
PPRA 436 Introduction to Computers in Planning	3
PPRA 440 Introduction to Urban Planning Theory and Practice	3
Electives	3
	16

Third Year

Spring	
PPRA Statistical Analysis for Planning	3
PPRA 721 Planning Theory	3
Electives	9
	15

Fourth Year

During the fourth year, the student is required to enroll in two additional planning courses:

Fall	
PPRA 470 Introduction to Social Policy	4
Electives	12
	16
Spring	
PPRA 433 Planning Analysis	4
Electives	11
	15
Total	132

Urban Planning and Development

The intention of this program is to offer students completing their first two years in the undergraduate architecture program the opportunity to major in urban planning and development 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 masters program in UPD is organized for that purpose. This major is organized primarily to offer students coming from an architectural program an opportunity to redirect their academic training toward the understanding of urban problems and their potential solutions.

In general, this major will open up new directions for students for academic or professional activity which can be pursued in greater depth in a variety of graduate programs either at Cornell or elsewhere. It is anticipated that qualified students will be able to move more rapidly through the professional masters program, requiring less than the normal two years, because of the concentrated coursework taken in the undergraduate program.

The program is designed to effect a smooth transition from architecture to planning. It is contemplated that students may wish to continue a few special interests in architecture on an elective basis, and a special workshop is required in the third year in which inputs from urban design, landscape architecture, and urban planning and development are combined to form a general introduction to the special concerns of the major.

It is also contemplated that the major may serve as a preparation for graduate work, not only in planning, but possibly in other directions such as urban design, landscape architecture, public administration, or environmental engineering.

Admission to the Major

Students intending to take the major in Urban Planning and Development 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 UPD Committee on Undergraduate Majors.

Requirements

The major requires a minimum of 30 credit hours of coursework in the Department of Urban Planning and Development, including the following specific requirements.

<i>Required Courses</i>	<i>Credit Hours</i>
UPD 411 Introduction to Concepts and Principles of Urban Planning and Development	4
One of the following three courses:	4
UPD 401 Historical Development of the World's Cities	
UPD 413 Introduction to Human Ecology	
UPD 421 Introduction to Quantitative Techniques	
Junior Workshop	6
Senior Field Problem or Thesis	4

A total of 132 credit hours is required for the degree.

Electives

A number of UPD 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. A number of courses in Architecture are appropriate to the major. Possible illustrations include:

Arch. 333 Computer Applications
Arch. 544 Case Studies in Preservation Planning
Arch. 545 Design and Conservation
Arch. 613 Transportation
Arch. 639 Cybernetics and Design
Arch. 666 Human Factors in Architecture
Arch. 667 Architecture in its Cultural Context

Other courses appropriate to the major may be elected from many departments, including Policy Planning and Regional Analysis, Landscape Architecture, Economics, Sociology, Public Administration, Law, Rural Sociology, and Design and Environmental Analysis among them. Choice among electives depends on the program worked out between the student and his department adviser.

Graduate Degree

Students who wish to continue in the department to complete the requirements of the degree of Master of Regional Planning must announce their intention during the fall term of their fourth year. Such students must have shown superior performance in their planning courses; their records will be reviewed by the regular standards for admission to the graduate program, and the decision on admission will be announced to them at the end of the fall term. Only a limited number of students may be admitted in this way.

Students thus informed that they will be admitted to the graduate program will be excused from the requirement of a senior field problem or thesis, so that they may take other course work with the objective of completing the requirements for the degree of Master of Regional Planning in one additional year. This option depends upon approval by the Cornell Graduate School.

Curriculum

<i>Prerequisite:</i> First two years of Bachelor of Architecture Curriculum	<i>Credit Hours</i> 70
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Third Year

Fall

Introduction to Concepts and Principles of Urban Planning and Development	4
UPD 411	4
UPD elective*	8
Other electives	16

Third Year

Spring

Junior Workshop	6
UPD elective	4
Other electives	7
	17

Fourth Year

Fall

Introduction to Human Ecology UPD 413**	4
UPD elective	4
Other electives	9
	17

Fourth Year

Spring

Senior Field Problem or Thesis	4
Other electives	8
	12
Total	132

Graduate Programs

The programs in which graduate study may be pursued in the Department of Architecture are architectural design, urban design, and regional design leading to the Master of Architecture (M. Arch.) degree; architectural science leading to the Master of Science degree; architectural history and history of urban development leading to the Master of Arts and Ph.D. degrees. There is also a joint program, which normally requires three years, leading to both the Master of Architecture and the Master of Regional Planning degrees conducted by Architecture, Policy Planning and

*UPD electives must total at least 12 for total Department requirement of 30 credit hours.

**or UPD 401 or UPD 421

Regional Analysis, and Urban Planning Development.

The graduate program in landscape architecture leading to the Master of Landscape Architecture (M.L.A.) degree is administered jointly by the Department of Architecture and the Department of Urban Planning Development.

Design

Students who have satisfactorily completed all requirements for an undergraduate professional degree in architecture 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 studies or environmental design 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 his elective program to reinforce and supplement the studio work. A minimum of sixty credit hours is required. Of these, thirty-six are in design studio work, between nine and twelve in a minor concentration within or outside the Department of Architecture, and the remainder in general course work of which at least six credit hours must be taken outside the Department of Architecture and, preferably, outside the College. Students majoring in urban design or regional design are required to take a minimum of nine credit hours in Urban Planning and Development or Policy Planning and Regional Analysis courses.

Normally four terms of study are required, and the student should not anticipate completing his studies in less than this time, although in special cases the requirements may be completed within three-semester of residence.

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

First-year graduate students normally elect the studio in their area of major concentration. Special projects organized by the faculty may be offered and elected as an alternative to participation in one of the studios with the

permission of the instructor and the Program Concentration Committee. Second-year studio work is normally devoted to the thesis. However, the student may elect, with permission of the Program Committee, to devote only the fourth term to the thesis.

Architectural Science

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

Students with undergraduate degrees in architecture, architectural engineering or the various branches of engineering, or 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 student and to build on his 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 and building technologies.
2. To provide a framework within which students who have graduated in related technical disciplines can explore building science and technology related specifically to architecture. This training prepares students with such backgrounds to join the ranks of consultants well versed in the architectural implications of contemporary science.
3. To provide a framework within which the student can explore the application of these disciplines in an architectural context.

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

Ordinarily more than two terms of residence will be required to complete the program of study, depending on the student's background and experience as they relate to his needs and interests. A portion of the student's program will consist of formal course work. In addition to the courses offered by the College of Architecture, Art, and Planning, a student may select courses offered elsewhere in the University, such as courses in civil engineering, engineering mechanics, mechanical engineering, electrical engineering, physics, computer

science, mathematics, housing and environmental analysis, anthropology, and sociology.

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

Architectural History

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 either History of Architecture or History of Urban Development as major or minor subjects. They have normally undertaken undergraduate curricula emphasizing architecture, history of art, or related studies.

The graduate program in architectural history is concerned with methods of scholarship and research as well as the record of development of architecture from the earliest times to the present day. A special feature of the program is the opportunity for the student to prepare for the teaching of the history of architecture in the context of the professional school of architecture. It is administered jointly with the graduate program in history of urban development. Preservation planning is offered as a minor subject. Work consists of seminars and courses in this and other departments in combination with independent study under individual direction by faculty. For the degree of Master of Arts in architectural history, candidates must satisfy the requirement for a reading knowledge of one approved foreign language, pass examinations in their major and minor subjects, and submit a satisfactory thesis. The Fine Arts Library provides a focus and resources for study and preparation of the thesis.

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

Landscape Architecture

The graduate program in landscape architecture leading to the Master of Landscape Architecture (M.L.A.) degree is administered jointly by the Department of Architecture and the Department of Urban Planning Development. A full description of the program may be found on page 23.

Summer Term in Architecture

Whenever there is sufficient student demand and an adequate faculty available, a summer term will be offered at both graduate and undergraduate levels in the field of architecture.

The term is usually of six to eight weeks duration.

At the undergraduate level the time is normally devoted exclusively to one subject—architectural design. Credit will be given for successful completion of the work, and it may, with faculty approval, be considered one term of design as required in the curriculum or may be allocated to elective credit hours.

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

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

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

Art Undergraduate Program

The undergraduate curriculum in art, leading to the degree of Bachelor of Fine Arts, provides an opportunity for the student to combine a general liberal education with the studio concentration required for a professional degree. During the first year, all students follow a common course of study designed to provide a broad introduction to the arts and to provide a basis for the intensive studio experience in painting, sculpture, and the graphic arts afforded in the last three years. In the third semester, students take either painting or sculpture and a required course in printmaking. Beginning with the fourth term, students concentrate on painting, sculpture, or printmaking. They may elect additional studio work in any of these subjects during the last two years, with the consent of the instructor, providing the courses are taken in sequence and at the hours scheduled. These courses are designed to promote a knowledge and critical understanding of these arts 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 his four years at Cornell; the remainder is devoted to a diversified program of academic subjects with a generous provision for electives.

The curriculum in art is an independent program of studies within the College of Archi-

ecture, Art, and Planning. The intimate relationship thus established between training in fine arts and training in architecture and city planning is a source of special strength in the Cornell program and affords unusual benefits to the students in these three disciplines.

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

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

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

Curriculum

<i>First Year</i>	
<i>Fall Term</i>	
Color, Form, and Space 110	4
Introductory Drawing 151	3
Introductory Painting 121	3
and/or	
Introductory Sculpture 141	3
Electives	6
	16
<i>Spring Term</i>	
Introductory Drawing 152	3
Introductory Painting 122	3
and/or	
Introductory Sculpture 142	3
Electives	10
	16

<i>Second Year</i>	
<i>Fall Term</i>	
Second-Year Drawing 251	3
Printmaking 330, 331, or 332	3
Second-Year Painting 221	3
and/or	
Second-Year Sculpture	3
Electives	7
	16
<i>Spring Term</i>	
Second-Year Drawing 252	3
Second-Year Painting 222	3
and/or	
Second-Year Sculpture 242	3
and/or	
Printmaking 130, 131 or 132	3
Electives	10
	16

Third and Fourth Year

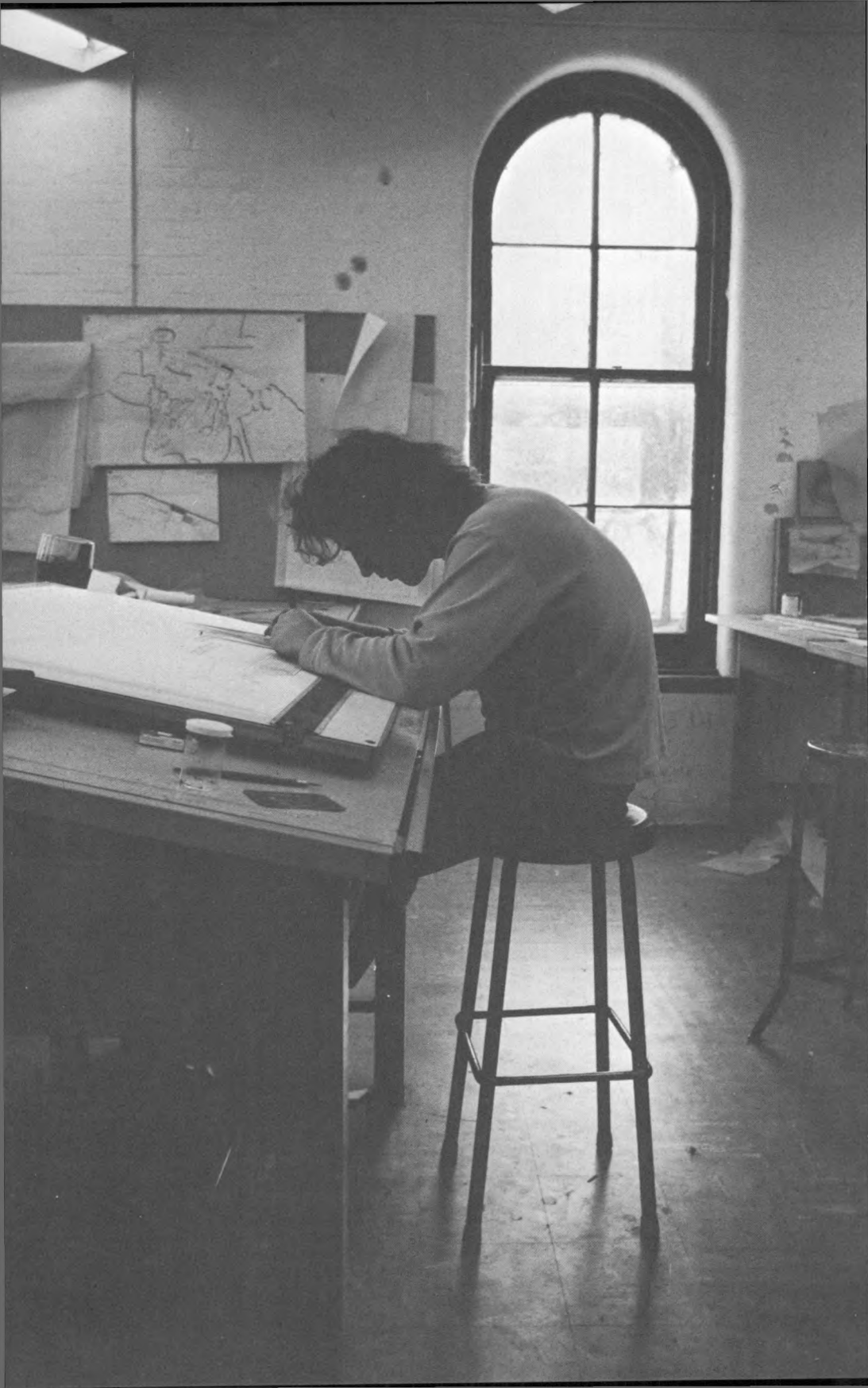
In the last two years the student should design his program so that he completes the fourth-year level in painting or sculpture or graphics or so that he achieves the completion of the third-year level in two of those three areas. Twelve additional credits in art history at the 200 level or higher or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

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

1. Of the minimum of 52 elective credit hours to be taken outside of the Department of Art, four courses must be in English, History, or other humanities offered in the College of Arts and Sciences. This distributional requirement must be completed in the first two years. Six credits in art history at the 200 level or higher or in architectural history must also be completed in the first two years. Twelve additional credits in art history at the 200 level or higher or in architectural history must be completed in the last two years.
2. Of the minimum of 52 credit hours to be taken within the Department of Art, the following courses must be completed in the first two years: Art 110, 151, 121, 141, 152, 142, 122, 251, 130, 131, 132, 221, 241, 252, 222, 242.

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 his candidacy in residence at the University



subject to the conditions of the Cornell Faculty Legislation of November 14, 1962.

Graduate Study

A student who holds a bachelor's degree or its equivalent and has clearly 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 credit hours; of this, from seven to ten credit hours will be assigned to studio work, two credit hours 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 hours of academic work outside the Department of Art during their four terms in residence.

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

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

Since the course of study is intended for those who, in the opinion of the faculty, are competent to do independent work in the field of their choice, all applicants must submit photographs of their work. Color slides are preferable for 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 will have been allocated at the beginning of the school year. Assistantships are generally awarded to second-year students only. Transfer credit for work done elsewhere, or during the summer, is not acceptable.

Planning

Objectives and Facilities

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

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

Students in planning are encouraged to take advantage of the resources in related programs at Cornell. The expanding program of urban research at the University is focused in the Center for Urban Development Research as well as in the College of Architecture, Art, and Planning. The Center for Aerial Photographic Studies, the Water Resources and Marine Sciences Center, and the Center for Environmental Quality Management also provide research programs and assistance which enable the departments and individuals to focus their interests in these areas. Graduate programs in the Graduate School of Business and Public Administration, the School of Civil Engineering, the School of Industrial Engineering and Operations Research in the College of Engineering, the Law School, and the Department of Architecture offer opportunities for related or 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 each of the two departments which offer the M.R.P. degree. The standard requirements of the Graduate School for the selection of major and minor subjects do not apply to planning students at the master's level. Instead, prospective students are subject to the specific requirements of their department. These requirements are listed in the departmental descriptions on p. 20.

The Department of Policy Planning and Regional Analysis and the Department of Urban Planning and Development are the two departments within the College that offer programs leading to the M.R.P. degree. Each department has clearly defined educational goals which, while related, are aimed at providing training for significantly different areas of planning activity. Before applying for admission in planning a prospective student should review carefully the descriptions and courses for each department and apply to the one that most closely satisfies his interests. Specific questions about the M.R.P. programs may be addressed to the dean of the College, the appropriate department chairman, or the Graduate Field Representative for the Field of City and Regional Planning.

Doctor of Philosophy

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

Each candidate for the Ph.D. degree must complete a program of studies approved by his Special Committee, composed of a chairman representing his major subject and other

members of the graduate faculty representing minor subjects. Those interested in obtaining the Ph.D. degree should consult the *Announcement of the Graduate School* for additional information on the requirements for the degree.

The course of study requires work in two minor subjects in addition to a major subject in the Field of City and Regional Planning and the preparation of a satisfactory thesis. Minor work is possible in such subjects as aerial photographic studies, agricultural economics, architectural history, comparative government, econometrics and economic statistics, economic development, economic theory, consumer economics and public policy, environmental analysis and design, law, natural resources, conservation, operations research, the political process, political theory, public administration, research methodology, sociology, statistics, environmental and civil engineering, sanitary engineering, and transportation engineering among others. In consultation with the chairman of his Special Committee, the Ph.D. candidate will normally select two minor subjects which best complement his research interests in city and regional planning.

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

Information not found in this *Announcement* may be obtained by writing the Graduate Field Representative, City and Regional Planning, 109 West Sibley Hall.

The Department of Policy Planning and Regional Analysis

Programs of Study

The Department of Policy Planning and Regional Analysis is broadly concerned with social decision-making processes: the formation of public policies, the design and evaluation of programs, the development of institutions, and the creation of legislative and administrative implementation devices. Policy planning is the attempt to analyze choices and values which underlie public policy and, given sparse resources, to help policy-makers choose between alternatives so as to reach the community's goals and objectives. Regional analysis is the study of subnational social systems at the regional, community, and group levels and the ways in which they relate to the larger systems of which they are part. These concerns reflect a general view of planning which can be applied to a number of areas: urban physical development; health,

welfare, education, manpower, housing, and recreation systems; and the development of lagging regions and of regions in third world nations. This view of planning entails the use of theoretical and analytical tools developed for the study of social and economic systems and the relationships between them.

Within this broad framework, students have considerable flexibility in pursuing their own areas of interest. It is possible to develop programs of study which may vary across a wide spectrum from those which have a very general approach to planning to those with a more specialized focus. Some current areas of specialization of interest to the faculty are social policy planning, regional analysis and development planning, urban and environmental systems planning, housing, health planning, and nonmetropolitan planning, among others. Some of these specializations are elaborated as follows: (1) The structure and content of the social policy planning specialization reflects the expanding scope and changing functions of the planning profession. The specialization offers quantitative and nonquantitative training 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 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 create linkages between social scientists, government policy makers, and indigenous groups interested in social change. The program offers instruction and research in the socioeconomic, spatial, and political aspects of social systems and the policy-making process. (2) To meet the need for research and training for professionals working on planning problems in developing countries, a specialization in international aspects of urban and regional planning has been established in the department. The objectives of this specialization are to offer training for students and planners from low-income countries to enable them to begin or continue work in research, planning, or administration of local and regional efforts; 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. (3) There are a wide variety of planning problems associated with non-metropolitan areas. For example, one might be to identify ways that the poor of non-metropolitan America may find their way into more prosperous and less

dependent situations, with more control over their own fortunes. The study of social and political institutions in communities is emphasized because, rather than the several approaches open to those concerned with urban poverty, it is practically the only one for the study of rural areas. Furthermore, problems of regional economic development and decline, an issue just emerging in national politics, are also dealt with. (4) 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 formulation and analysis are also concerns.

Specific Faculty Interests

- Francis J. Cesario, Ph.D. (economics): regional science, environmental quality management, recreation analysis
- Pierre Clavel, Ph.D. (city and regional planning): planning theory, administration, regional development
- William Goldsmith, Ph.D. (city and regional planning): regional development planning and administration, economic analysis, urban and regional planning in developing countries
- Cary Hershey, Ph.D. (public administration): social policy planning, social change, administrative theory, manpower, education and welfare programs
- Walter Isard, Ph.D. (economics): regional science
- Barclay G. Jones, Ph.D. (economics): urban and regional quantitative analysis, urbanization theory, planning theory, environmental health planning, historic preservation planning
- David B. Lewis, Ph.D. (city and regional planning): urban and regional planning in developing countries, technology transfer
- K. C. Parsons, M.R.P.: university and institutional planning, land-use planning, urban renewal, new community planning
- Courtney Riordan, Ph.D. (city and regional planning): environmental health planning, comprehensive health planning, quantitative methods of economic analysis
- Sidney Saltzman, Ph.D. (operations research): quantitative methods and systems analysis in planning, computers and information processing systems
- Bert Swift, Ph.D. (political science): public administration, social policy planning, planned organizational and community change
- Thomas Vietorisz, Ph.D. (economics): urban economics, regional economics, regional science, center city economic development
- D. F. Williams, Ph.D. (urban planning): economic and social elements of urban housing, social planning theory and practice, political economic analysis for collective choice in

the public sector, political economics of change in developing countries

Admissions

Beginning graduate students can apply to the master's program or to the doctoral program as candidates for the master's degree. Transfer to the doctoral program can be requested at any time after the second semester of work. Applicants with previous graduate work can apply for advanced standing or direct admission to doctoral study.

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

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

Joint graduate programs between planning and law and between planning and urban design are possible. Students desiring to pursue such a joint program must be admitted to the two fields of study of interest to them. Under such a joint program, it may be possible to complete the requirements for both professional degrees in less time than normally required when both degrees are pursued separately.

Curriculum and Requirements

Graduate study for the Master of Regional Planning degree is intended to provide the basic foundation in theory and professional skills in analysis, methods, and techniques needed for practice in the field. The course of study for the M.R.P. degree normally requires two years.

Students in the first year select a special committee consisting of one to three faculty members with whom he develops the course of study he will pursue. There are no specific courses required. Students normally take one or more courses in the following areas: (1) Planning theory; (2) urban and regional theory; (3) methods of investigation and analysis; and (4) planning institutions, to attain a foundation for specialization. A variety of programs of study are available in such areas as social policy planning, planning in developing countries, urban and environmental systems planning, regional economic and development planning, health systems planning, and housing. Unique programs of study can also be developed.

Field work experience in the summer between the two years is recommended.

A minimum of sixty credit hours of course work is required for the M.R.P. degree. Thirty of these credits must be in courses offered by the Department. In addition, candidates for the M.R.P. degree must demonstrate an ability to do independent work as a professional in planning. The nature of this independent effort will be planned by the student and the chairman of his Special Committee. Independent work normally entails specialization in course offerings during the latter part of the program, and students are encouraged to choose an adviser relevant to such specialization early in the program of study.

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

The Department of Urban Planning and Development

Programs of Study

The basic goal of the Department of Urban Planning and Development is to provide graduate-level professional training essential for persons seeking careers with the broad range of public agencies involved in urban planning, development, housing, renewal, and many other related activities. These are primarily at the municipal, metropolitan, county, regional, and state levels, with citizens' and neighborhood groups which 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 Department's teaching, research, and community service programs is on the applied aspects of urban planning and development activities. The Department's program is concerned to a great extent, with the determinants of land-use and arrangement of space within cities and regions—their planning, development, control, and management. Considerable attention is also 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 an important input to the Department's interests, as are matters of improving the quality of the physical environment. Emphasis is on the urban aspects of these programs, generally at the scale of neighborhood, city, or metropolitan region.

The educational approach of the Department is primarily prescriptive, emphasizing case

studies and field work courses which are integrated with a broad range of academic courses. These necessarily draw 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 that would ordinarily face the practicing urban planner. Working together with faculty and fellow students, he can learn his own strengths and weaknesses and the student can also develop his own style of operation. Much of the work produced in field work courses provides the basis for student term papers, reports, and thesis projects.

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

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

The urban planning process; information gathering and processing; techniques of analysis; planning administration and organization; social, political, and governmental structure

Implementation of urban plans and development programs; land acquisition techniques; land-use controls; municipal finances; social organization and action; governmental policies and legislation for urban planning and development

Design of urban and regional space; urban aesthetics; man-environment relationships; ecological influences on land development; environmental psychology; evaluation of regional design resources; conservation and preservation of large-scale design features; impact of urban and regional development on the landscape; evaluation of pollution, energy limitations, raw materials, etc., on urban development planning

Social science research and analysis techniques applicable to urban planning; planning social structures; research design and analysis of urban sociological data; operational gaming techniques as a tool for teaching, understanding and communicating urban planning concepts

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

Urban planning practice; planning with specific client groups; governmental agency planning; advocacy planning; field work experience

For the guidance of prospective students, it should be emphasized that the program of

studies offered by the Department concentrates primarily on those aspects of planning dealing in a comprehensive way, with improving the urban environment, and with the action programs necessary to achieve that goal. Students interested primarily in planning for social services with no interest in planning for the physical environment should address their inquiries to other departments which focus on these areas. The department of Policy Planning and Regional Analysis may satisfy the interests of such prospective students. Those concerned mainly with social and economic policies, quantitative methods of analysis, urban and regional theory, policy planning for developing nations, etc. should apply to the Department of Policy Planning and Regional Analysis. Those concerned mainly with three-dimensional large-scale architecture or urban design should apply to the Department of Architecture.

Specific Faculty Interests

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

Robert Dormer: housing, renewal, and new town development

Joseph Gentili: landscape architecture analysis, social factors in landscape design, large-scale environmental programming and implementation

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

Howard Hammerman: social science research and analysis techniques, ecological influences on land development, human ecology, operational gaming techniques

Michael Hugo-Brunt: history of architecture, city planning and development

Burnham Kelly: land-use regulation, development controls, the housing industry

Thomas W. Mackesey: history of city planning, university planning

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

William J. Osby: community development planning

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

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

Oliver C. Winston: housing, renewal and urban development planning

Admission

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

Beginning graduate students can apply to the master's program or to the doctoral program as candidates for the master's degree. Application for transfer to the doctoral program can be made at any time after the second semester of work. Applicants with previous graduate work can apply for advanced standing or direct admission to doctoral study.

The Department has recently initiated a new graduate program in Landscape Architecture jointly with the Department of Architecture. That program will draw heavily upon the resources of Urban Planning and Development, as well as on many other departments and research activities throughout the University. Similarly, students in UPD will have the opportunity to benefit from the growing potential of the landscape and large-scale environmental design field because of its close integration with the UPD 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 Landscape Architecture, the College of Architecture, Art, and Planning.

The Department also offers students an option to enroll in special joint programs which combine urban planning with law or urban planning with urban design. Graduate students may earn both the J.D. and M.R.P. degrees in a total of four years, or the M.Arch. and M.R.P. degrees in a total of three years by following an approved program. In each case, this is a shorter period of time than normally required for both degrees. Students interested in either option should request special information about the joint programs by consulting the advisers in the Urban Planning and Development Department, in the Architecture Department, or in the Cornell Law School.

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

For further information about application and admission requirements not found in this *Announcement*, write to the Chairman, Department of Urban Planning and Development, 106 West Sibley Hall.

Curriculum and Requirements

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

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

The curriculum is subdivided into the following requirements:

	<i>Credit Hours</i>
Four specified foundation courses	16
Courses elected by the student in one area of concentration	10
Field work courses	6
Thesis, special approved project, or research paper	6
Electives	22
	Total 60

The foundation courses include the following:

- AUP 511 Introduction to Concepts and Principles of Urban Planning and Development
- AUP 521 Introduction to Quantitative Techniques in Urban Planning
- AUP 541 Introduction to Environmental Planning and Design plus one of the following: (Selection based on student's previous coursework with the agreement of student's adviser.)
- AUP 513 Introduction to Human Ecology
- AUP 512 Urban Economic Analysis

APP 710 Introduction to Urban and Regional Theory

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

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

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

- Urban History and Preservation of Historic Areas
- Housing and Urban Development Programs and Policies
- Land Use Planning
- The Law of Planning and Urban Development
- Design of the Physical and Natural Environment
- New Communities and Urban Fringe Development
- Techniques of Plan Implementation
- The Development Process
- The Sociology of Urban Communities
- Planning and the Minority Community
- Comprehensive Community Planning
- Functional Area Planning
- Institutional Planning
- Community Facilities Planning
- Neighborhood Planning
- Regional Economic Planning and Development

By building upon the basic planning curriculum and drawing upon the broad resources of the University, additional concentrations may be formulated with the consent of the student's adviser in areas such as the following:

- Natural Resource Planning and Analysis,
- Transportation Planning, Municipal Finance and Administration, Planning for Lagging Regions and Underdeveloped Countries, Urban Anthropology, Environmental Psychology, Urban Politics, Manpower Development Planning, Social Service Program Planning, Political Mobilization and Community Organization, Urban Mass Communication Techniques, Small Town and Rural Development, Macro-Environmental Design.

Students can fulfill the field work course requirement by selecting from a broad list of opportunities organized by several members of the faculty. Because these opportunities are based upon the needs of real clients and are in real settings wherever possible, the listing of field work courses is continually changing. Ordinarily, the student will not take a field work course until he or she has completed the first year in the program. However, many students do choose to engage in field work in their first year and are permitted to do so depending upon their prior backgrounds and qualifications. Students will have an opportunity to work singly or in groups, sharing knowledge, ideas, and backgrounds within a setting that is close to an actual professional experience. These courses, together with a summer internship or other job experience, are aimed at providing an opportunity to apply, in real situations, the skills gained from other courses in the Department.

The Department requires that a master's thesis (six credit hours) be completed for the degree. In special circumstances, upon the petition by the student to the faculty of the Department, a special project or research paper may be substituted for the thesis. The faculty of the Department encourages the thesis student to integrate his applied field work experience with his thesis project or research paper and to vary from the traditional form of an academic thesis. Instead, the student has the option of submitting a professional project or a piece of work, integrally related to the urban planning and development field, which may be presented in other than written form. The opportunities for satisfying this requirement are very broad and varied.

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

Program in Landscape Architecture

The Department of Urban Planning and Development and the Department of Architecture jointly sponsor a graduate program in landscape architecture. Pending approval by the Cornell Board of Trustees and the Division of Professional Education of the New York State Education Department, the two-year program will lead to the degree of Master of Landscape Architecture (MLA).

The primary objectives of the program (leading to the degree Master of Landscape Architecture) are to conduct research and to provide



appropriate training for individuals who choose to teach, to conduct applied research or to practice in the profession of landscape architecture.

A secondary objective of the program is to provide increased educational opportunities to students in the related professional programs of Architecture, City and Regional Planning, Civil and Environmental Engineering, Human Ecology, Environmental Conservation, and other fields.

The emphasis of the program will be on the systematic analysis and synthesis of data from diverse disciplines for the practical purposes of planning and designing the "built environment"—i.e., modifications of the natural environment. The program should be distinguished from training programs concerned mainly with environmental systems engineering, the natural science aspects of the environment, or environmental quality measurement. The "built environment" is a consequence of a design process concerned with user needs for man-made physical space and the relationship of that space to the natural environment.

It is anticipated that six to ten students will begin work in the program at the beginning of academic year 1973-74. The program is expected to grow in annual increments until it achieves a steady-state enrollment of about thirty students in the two-year program.

Admission

Initially the program will serve to supplement undergraduate education in design through providing a broader educational experience to those who are technically skilled. Applicants are therefore expected to hold a bachelor's degree in architecture, landscape architecture, environmental design or a similar field from a recognized institution of higher learning.

As the program develops, it is anticipated that the professional training of students from non-design backgrounds will be undertaken.

While there are no fixed admission requirements, collective consideration of grades, class standing, G.R.E. scores, samples of undergraduate work, letters of recommendation and the applicant's statement of interests must indicate a level of ability adequate to the successful completion of the program.

Curriculum and Requirements

The M.L.A. degree is to be awarded upon the student's demonstration of a satisfactory level of competence in the core and concentration courses of an individualized curriculum that he has designed in collaboration with a landscape architecture major adviser. Sixty hours of course work constitute the minimum course work requirement; one academic year constitutes

the minimum residence requirement. A student may petition the Graduate School for advanced standing based upon previous education or experience.

The core courses include AUP 481, Contemporary Issues in Landscape Architecture, and three semesters' participation in the Landscape Planning and Design Workshop, or its equivalent, as determined by the graduate landscape architecture faculty. The courses in the sequence are numbered AUP 581, 582 and 682.

Other core courses may include courses in statistics, quantitative methods, engineering aspects of landscape construction, landscape history, plant materials, and design, and will vary among individual students depending upon their educational backgrounds and interests.

Other than satisfactory completion of the core courses, requirements for the M.L.A. degree include an approved summer internship experience, completion of a thesis or final project and completion of a minimum of fifteen hours' course work in a minor area of concentration. The area of concentration is to be chosen by the student prior to the beginning of his second semester of study.

Six credit hours will be granted for the thesis or final project which represents the student's findings based upon an inquiry whose subject he has determined in collaboration with his major adviser. The thesis or final project must be presented in a form which is suitable for storage and retrieval by members of the university community.

The area of concentration may be chosen from any of the relevant fields in the Graduate School or from the following nonexhaustive list:

1. Ecologic systems determinants of landscape design
2. Economic determinants of landscape design
3. Historic aspects of landscape design
4. Legal determinants of landscape design
5. Social determinants of landscape design

(Courses offered are described within the list of courses offered by the Department of Urban Planning and Development on page 56.)

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 origin, or sex.

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

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

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 whole secondary school record, the recommendations from his school, and either the Scholastic Aptitude Test of the College Entrance Examination Board or the American College Testing Program. Transfer students are normally accepted for admission only in September.

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

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

Every undergraduate applicant should plan to come to Ithaca during the fall term preceding the year for which he has made application

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

Requirements

All candidates for admission to the College must take the Scholastic Aptitude Test of the College Entrance Examination Board 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 he has already begun, the College advises him to take the College Entrance Examination Board Achievement Test in that language, for placement in the proper course. Three college credits in a language are considered, for the purpose of making up the entrance requirement while in college, to be equivalent to one year of high school language credit.

Candidates for admission to the *Department of Architecture* must present sixteen units including four units of English, four units of mathematics, and three units of foreign language (see above). Mathematics must include intermediate algebra, plane geometry, and trigonometry, taken either as separate courses or included within comprehensive mathematics courses. An acceptable course in physics, taken either in secondary school or in college is required for graduation.

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

Candidates for admission to the *Department of Art* must present sixteen units including four units of English, two units of college-preparatory mathematics, and three units of foreign language (see above). Remaining units should, in the main, consist of science and social studies (including history).

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

Transfer Students

A student who has already attended another institution of collegiate rank is admitted at the beginning of the fall term. The applicant is required to meet all entrance requirements and to comply with the rules governing admission. In addition, he should file with the Office of Admissions, Day Hall, an official transcript of record of his work at the institution already attended, together with a certificate of honorable dismissal therefrom. He should be prepared to send, if requested, a catalog of that institution, writing his name thereon, and marking the courses he has taken as listed in the transcript. The Scholastic Aptitude Test of the College Entrance Examination Board is required.

Graduate

Graduate programs in the College of Architecture, Art, and Planning are of two general types, requiring different admissions procedures. First, professional programs leading to the degrees of Master of Architecture, Master of Fine Arts, 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 14850 as follows: Candidates for the degree of Master of Architecture should write to the Chairman, Department of Architecture, Sibley Hall; candidates for the degree of Master of Fine Arts should write to the Chairman, Department of Art, Franklin Hall; candidates for the degree of Master of Regional Planning should first review the specific requirements for each department as listed in the departmental descriptions contained in this catalog and write to the appropriate department chairman. 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), 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 14850, sending a copy of the letter to the appropriate department chairman in the College of Architecture, Art, and Planning so that the College may know when an application is in process. Regulations governing the students in these academic programs may be found in the *Announcement of the Graduate School*.

Graduate applications should be completed by February 1 in order to be considered for awards of fellowships, scholarships, and other financial aids but may be received until March 15. When places remain to be filled, later applications will be accepted. The applications from United States citizens and from foreign applicants who reside in the United States and Canada must be accompanied by a \$15 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 it may be made contingent upon evidence of improved command of English.

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

Special Students

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

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

Financial Aid

Undergraduate Scholarships

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

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

Financial assistance is awarded through scholarships and long- and short-term loans available to students in all branches of the

University, and through scholarships administered by the various colleges.

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

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

Gillespie Prize Scholarships. Scholarships totaling \$800 may be awarded each year to fourth- or fifth-year students in architecture. These awards are made from the bequest of a former student of the 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. Dowswell Scholarship Fund. Open to a student in the College who stands in the top quarter of his class academically, who has a good personality, and who has demonstrated qualities of leadership. This fund was established by Col. John R. Dowswell and Mrs. Harold E. Van Der Linde in memory of their father. Annual award, \$700.

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

The 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 or Senior fall 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, architect '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 upper-classmen or graduate students who, in the opinion of the faculty, have done outstanding work and who preferably are in need of financial assistance.

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

Medals and Prizes

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

The Student Medal of the American Institute of Architects is awarded to the member of the graduating class in architecture who has maintained the best academic grade average throughout the entire course.

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

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

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

The Eschweiler Prize is made from a bequest of Alexander C. Eschweiler, Jr., '15 in memory of his father, Alexander C. Eschweiler, Sr., '90. An annual award of approximately \$700 is awarded to a student in architecture with high

scholastic achievement who has been accepted to one of the architecture graduate programs at the end of his fifth year.

The New York Society of Architects Medal and Certificate are awarded annually to that senior student who, in the opinion of the faculty and the Society's committee, is the leader of his class in total design—that is, design, planning and construction.

The Charles Goodwin Sands Memorial Medal, founded in 1900 by the family of Charles Goodwin Sands '90, may be awarded for work of exceptional merit done by a student in courses in architectural design, or by a student in the art curriculum for work of exceptional merit in painting and composition or sculpture. Theses in architecture or painting and sculpture are eligible for medal consideration.

The Edwin A. Seipp Memorial Prizes, one or more prizes in the total amount of \$150, were established in 1948 by Mrs. E. A. Seipp in memory of her husband, an alumnus of the Class of 1905. They are awarded in a special competition in third-year design.

The Edward Palmer York Memorial Prizes is one or more prizes in the total amount of \$100 which shall be awarded in a special competition for students in introductory design. Traditionally, the problem, lasting approximately one week, is given in the second term. The fund, established in 1931, was the gift of Mrs. Edward P. York.

The Faculty Medal in Art is awarded each year to the member of the graduating class in the curriculum in art who, by his academic record and work in the studio, has, in the estimation of the faculty, shown the greatest promise of future achievement in the field of art.

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

The American Institute of Planners Student Award is presented to a candidate for the professional degree in planning (M.R.P.) in recognition of outstanding ability. The qualities to be identified include consistently high academic record, leadership ability, maturity, research ability, and professional promise.

The Peter B. Andrews Memorial Thesis Prize is awarded for the best thesis prepared for the degree of Master of Regional Planning. It is granted from the income of a fund established by Mrs. Peter B. Andrews and Dr. George C. Andrews in memory of Peter B. Andrews, 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 his academic work or who, by his qualities of personality or leadership, has significantly contributed to the intellectual advancement of his fellow students.

The Fuertes Memorial Prizes in Public Speaking, founded in 1912 by Charles H. Baker, a graduate of the School of Civil Engineering of the class of 1886, are offered annually to members of the junior and senior classes in the Colleges of Engineering and Architecture, Art, and Planning for excellence in public speaking. The prizes are cash awards totaling \$400.

Traveling Fellowship

The Robert James Eidlitz Fellowship, the gift of Sadie Boulton Eidlitz, is available to persons who hold a degree in architecture from Cornell or who are now graduate students in architecture at Cornell. Its purpose is to supplement the professional training, by foreign travel or in other ways, of those who could not otherwise afford it. The income of the fund, \$2,200 per year, may be awarded to one or more candidates.

Graduate Fellowships

The *Announcement of the Graduate School* carries full information about Cornell University graduate fellowships and scholarships for which both entering students and students in residence are eligible. These awards are made by the Fellowship Board of the Graduate School. Graduate fellowships carry stipends from \$2,000 to \$3,000 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. Teaching assistantships carry a stipend of \$2,700 plus tuition.

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

ported by the United States Public Health Service.

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

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

Loans

University, New York State, and National Defense student loans are available to students at Cornell. Applications should be made through the Office of Scholarships and Financial Aid, 105 Day Hall, Cornell University, Ithaca, New York 14850.

General Information

Expenses

Living costs depend to a great extent upon the individual's standard of living. Recent estimates indicate that undergraduate students spend approximately \$1,500 a year for room and board. Laundry and cleaning, books, instruments, and other supplies will cost about \$700 a year. Additional allowance must be made for clothing, travel and incidentals.

Undergraduate students should refer to the *Announcement of General Information* for the amounts of tuition and details concerning payment. Graduate Student's should refer to the *Announcement of the Graduate School* for this information.

University Health Requirements

Each entering student, graduate or undergraduate, is expected to assume personal responsibility for the health requirements adopted by the Board of Trustees of 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 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 prepaid health care plan for student spouses which is identical in benefits to the student health care. For the payment of a fee each term a student spouse is entitled to unlimited medical visits to Gannett Clinic, up to fourteen days each term of hospitalization in Sage Infirmary and emergency surgical care. In addition, the Health Services will assume the cost of a first visit to a specialist (when referred by a Health Services physician). Other services are available at reduced cost to those who participate in this program.

Students may enroll their spouses prior to or during the first thirty days of any term.

This primary care program is not to be confused with the Student Accident and Sickness Insurance Plan (for Cornell students and their dependents). The student insurance supplements basic health care by providing twelve-month insurance coverage for students (and dependents) over and above benefits of the University Health Services, and by protecting the student when he is away from the Cornell campus (e.g., vacations).

Information and enrollment forms for the Student Spouse Prepaid Health Care Plan may be obtained by writing or visiting the University Health Services, Gannett Medical Clinic, 10 Central Avenue, Cornell University, Ithaca, New York 14850.

Insurance is available on a voluntary basis. For further details, including charges for special services, see the *Announcement of General Information*.

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

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 Committee on Requirements for Graduation.

Exemptions from the requirement may be made by the University Faculty Committee on Requirements for Graduation when it is recom-

mended 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 which the student has satisfactorily completed (whether or not Physical Education was included in his 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 non-swimmers 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*.

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 school sessions. Further particulars can be obtained from the Division of Summer Session and Extramural Courses, Cornell University.

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

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

Facilities

Buildings

The College occupies Sibley Hall, Franklin Hall, and the Foundry. In Sibley are the facilities for architecture and city and regional planning as

well as the administrative offices and the Fine Arts Library. The Department of Art is housed in Franklin Hall. Sculpture and shop facilities are in the Foundry. The Green Dragon, a student lounge, is located in the basement of Sibley Hall.

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

Libraries

The Fine Arts Library in Sibley Dome serves the College of Architecture, Art, and Planning through its collections on architecture, fine arts, and city and regional planning. A library of over 80,000 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 175,000 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 quite 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 can fulfill 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 5400 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. Because space is limited, a prompt return of the application form with a \$10 application fee before May 1 will help to insure assignment to University housing facilities. Entering students should note that *acceptance to Cornell does not necessarily guarantee space in University residence halls.*

Further information about housing may be obtained from the Student Housing Assignment Office, 223 Day Hall, or the Office of the Dean of Students, Barnes Hall, Cornell University, Ithaca, New York 14850.

Graduate Students

Sage Graduate Center provides dormitory housing for about 190 men and women. The building is in the center of the campus and provides a convenient cafeteria. Cascadilla Hall houses 155 men and women. An application form is enclosed with notice of provisional acceptance. Assignments are made in order of receipt of the completed application form at the Housing Assignment Office. Prompt return of the form will help to insure an on-campus housing assignment. A \$10 application fee must be enclosed with the application form.

Married Students

The University operates the Pleasant Grove Apartments and the Hasbrouck Apartments, garden-type housing developments at the edge of the campus, and the Cornell Quarters, a housing development south-east of the campus. For more detailed information, address inquiries to Married Student Housing Office, Building 40, Hasbrouck Apartments, Pleasant Grove Road, Ithaca, New York 14850.

Off-Campus Housing

Off-campus housing may be obtained in privately owned properties in Ithaca and the vicinity. As a service to students, the University posts and maintains a partial listing of available housing in the Housing Assignment Office, 223 Day Hall. An off-campus housing adviser is also available in the Housing Assignment Office.

Faculty Advisers

Each undergraduate student will be assigned a faculty adviser who, with those in charge of preregistration, will assist the student in working out his academic schedule, term by term, while he is in the College. The Office of the Dean stands ready at all times to help and guide the student, not only in academic matters, but also, when possible, in personal problems and difficulties he may encounter. In

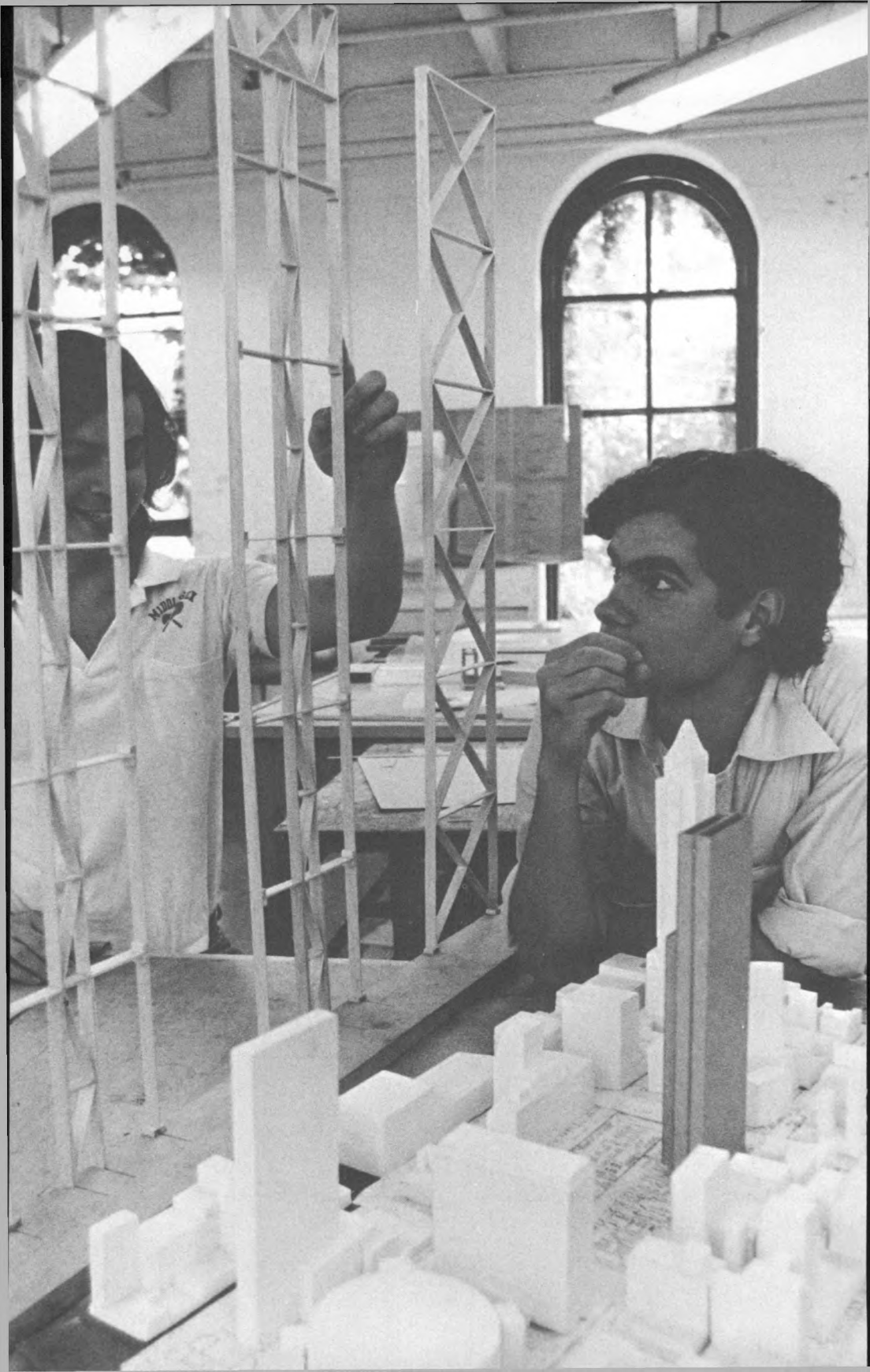
addition, the Office of the Dean of Students has trained staffs of counselors who may be consulted by University students on non-academic matters.

Foreign Students

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

University Privileges

The student of the College of Architecture, Art, and Planning is entitled to the use of all of the University's general facilities and privileges. He may elect courses of study in any of the University's colleges. 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.



Cornell University

Courses of Instruction

A new course numbering system has been devised. The number appearing in parenthesis next to the new number is the number used in previous years. New course offerings will show only the new number.

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

Architecture

Architectural Design

Sequence Courses

101-102 (101-102) Design I and II. Studio and seminar. Throughout the year. Credit four hours a term. Must be accompanied by Architecture 131-132.

201-202 (103-104) Design III and IV. Studio and seminar. Throughout the year. Credit four hours a term. Must be accompanied by Architecture 231-232.

301-302 (105-106) Design V and VI. Studio and seminar. Either term. Credit six hours a term.

401-402 (107-108) Design VII and VIII. Studio option and seminar. Either term. Credit six hours a term.
The studio options are offered in architectural design, urban design, or architectural technology and environmental science each term.

501-502 (109-110) Design IX and X. Studio. Either term. Credit eight hours a term.

Advanced Design Studio

503-504 (111) Thesis-Research. Either or both terms. Credit eight hours a term.

Thesis to be prearranged with the advisers during the fourth year.

505 (112) Special Program. Either or both terms. Credit eight hours a term. To be arranged with faculty during the fourth year. Intended primarily for students applying to a graduate program in the College.

Nonsequence Courses

200, 300, 400, 500 (119) Elective Design. Either term. Credit as assigned. May be repeated for credit. Open by permission to students who wish to take additional work in design or transfers who have not been assigned to a sequence course.
The student will be assigned to work with a class of appropriate level.

111-112 (121-122) Elective Design Studio. Either term. Credit as assigned. Registration restricted to out-of-Department students. Permission of the instructor required. To be coordinated by Architecture Department Office. Must be accompanied by Architecture 131-132.

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

311-312 (137-138) Seminar on the Architectural Design Process. Either term. Credit two hours. Open to undergraduate students. Prerequisite: permission of the instructor. G. Hermanuz.
The architectural design process as it relates to the cultural and social environment.

610 (139-140) Theory of Organic Architecture. Spring term. Credit three hours. Open to undergraduate and graduate students. G. Lesnikowski.
The seminar deals with concepts of organic and cellular architecture, the world of biological forces, the concept of balance in architecture, the meaning of symbols and central forms, ideas of centrum and core, and with morphological growth patterns and repetitions

of architectural functions. A variety of concepts of habitation and planning as well as technical innovations will be discussed and researched.

611-612 (133-134) Seminar: Urban Housing Developments. Either term. Credit two hours. Limited to fourth and fifth-year students in architecture and graduate students. Prerequisite: permission of the instructor. O. M. Ungers. Concentrates on large-scale housing developments, particularly in relation to size, density, and problems of infrastructure.

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

614 (136) Seminar: Outer City Development. Spring term. Credit two hours. Open to third, fourth, and fifth-year students in architecture and graduate students. Prerequisite: permission of the instructors. C. Pearman and J. Shaw. Environmental design issues in development of areas peripheral to and between central cities; a survey and analysis of alternative spatial models for structuring 'outer city' development.

Graduate Courses

618-619 (185-186) Seminar in Urban and Regional Design. Throughout the year. Credit three hours. Open to fifth-year and graduate students. O. M. Ungers, Staff, and Visitors. Deals with a broad range of issues and problems of urban and regional development and the context in which the designer functions. Selected case studies are presented by the participants and visitors.

711-712 (171-172) Problems in Architectural Design. Studio and seminar. Throughout the year. Credit nine hours each term. The basic first-year design course for graduate students whose major concentration is architectural design.

713-714 (181-182) Problems in Urban Design. Studio and seminar. Throughout the year. Credit nine hours each term. The basic first-year design course for graduate students whose major concentration is urban design.

715-716 (191-192) Problems in Regional Design. Studio and seminar. Throughout the year. Credit nine hours each term. The basic first-year design course for graduate students whose major concentration is regional design.

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

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

813 (193) Thesis or Research in Regional Design. Throughout the year. Credit eighteen hours. Second-year design course for graduate students whose major concentration is regional design.

Structures

Sequence Courses

221 (203) Mathematical Techniques. Fall term. Credit two hours. Mathematics Department. Introduction to mathematical concepts and operations utilized in architecture.

222 (204) Structural Concepts. Lecture and Laboratory. Spring term. Credit four hours. D. P. Greenberg. Fundamental concepts of structural behavior.

321 (205) Structural Systems I. Fall term. Credit three hours. Prerequisites: Architecture 221 and 222. Structural design concepts and procedures for timber and steel building construction.

322 (206) Structural Systems II. Spring term. Credit three hours. Prerequisites: Architecture 221 and 222. Structural design concepts and procedures for reinforced concrete building construction.

Nonsequence Courses

323 (221) Advanced Steel Building Design. Fall term. Credit three hours. Prerequisites: Architecture 222 and permission of the instructor. F. W. Saul. Design and investigation of advanced systems of steel building structure, plastic design of continuous beams and rigid frames, composite steel beam and concrete slab construction, steel space frames.

324 (222) Surface Structures. Spring term. Credit three hours. Permission of the instructor required. 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 (226) Building Substructure. Spring term. Credit three hours. Prerequisites: Architecture 322 and permission of the instructor. F. W. Saul. The principles of soil mechanics and sub-surface exploration. Design of building foundations—footings, piles, subgrade walls.

328 (224) Advanced Reinforced Concrete Building Systems. Spring term. Credit three hours. Prerequisites: Architecture 322 and permission of the instructor. Review of methods and specifications for the design and construction of reinforced concrete building systems. Two-way framing systems. Precast concrete construction. Discussion of ultimate strength and yield line theories. Quality control of reinforced concrete. Exploration of new techniques in concrete construction. Selected topics.

Architectural Principles

Sequence Courses

131–132 (301–302) Introduction to Architecture. Lecture. Throughout the year. Credit two hours a term. Architecture students must register for this course with Architecture 101–102. Also open to out-of-Department students. Introduction to the field of architecture and its relation to other disciplines.

231 (303) Architectural Elements and Principles. Lecture. Throughout the year. Credit two hours per term. Architecture students must register for this course with Architecture 201–202. Also open to out-of-Department students. Prerequisite: Architecture 131–132. Staff. Discussion of basic principles and components of architectural organization.

232 (304) Architectural Elements and Principles. Lecture. Throughout the year. Credit two hours per term. Architecture students must register for this course with Architecture 201–202. Also open to out-of-Department students. Prerequisite: Architecture 131–132. Staff. Discussion of basic principles and components of architectural organization.

630–631 (309–310) Advanced Seminar in Architecture. Throughout the year. Credit two hours per term. Required for all fifth-year architecture students. Open to graduate students. Staff and visiting critics.

Nonsequence Courses

333 (323) Computer Applications. Fall term. Credit three hours. Enrollment limited to third-year students and above. D. P. Greenberg. Designed to acquaint the student with the current uses and potentials of electronic computers in the architectural profession. No prior

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

335–336 (325–326) Theory of Architecture. Throughout the year. Credit three hours a term. First term not prerequisite to the second. L. Hodgden.

437–438 (327–328) Special Projects in Computer Applications in Architecture. Either term. Credit three hours per term. Prerequisite: Architecture 333. D. Greenberg. Advanced work in particular topics covered in Architecture 333 such as CPM, Urban Models, and Computer Graphics.

[639 (329) Cybernetics and Design. Fall term. Credit three hours. Open to third, fourth, and fifth year undergraduate and to graduate students. Out-of-college students by permission of the instructor. A. Mackenzie. Not offered 1973–74. An introduction to the principles of the science of cybernetics and to its application to problems in the field of architecture. Lecture and workshop.]

Architectural History

Sequence Courses

141–142 (401–402) History of Architecture I and II. Throughout the year. Credit three hours a term. C. Otto and S. Jacobs. The history of architecture considered as a social and cultural expression of Western civilization. The nature and scope of the field is considered in the fall; history of modern architecture discussed in the spring. Intended for students in other colleges interested in an introduction to the history of architecture, and required of all architecture students. No special skills or knowledge are necessary. Nonarchitects may take either or both terms for credit. Slide lecture, readings, short papers, and examinations.

244 (404) History of Preindustrial Building. Spring term. Credit four hours. W. Cummer. The development of traditional architectural elements and forms: materials, methods and design expression. Lectures, readings, and papers or exercises.

Nonsequence Courses

340 (430) The Ancient Near East. Spring term. Credit four hours. Prerequisite: Architecture 141 or permission of the instructor. Architecture of the oldest historic civilizations associated with Western tradition with emphasis on Egypt and Mesopotamia.

341 (431) The Classical World. Fall term. Credit four hours. Prerequisite: Architecture 141 or permission of the instructor. W. Cumber. Architecture of the ancient Mediterranean civilizations, with emphasis on Greece and Rome.

[342 (432) The Early Middle Ages. Credit four hours. Prerequisite: permission of the instructor. Not offered in 1973-74.]

344 (434) Islamic Architecture. Spring term. Credit four hours. Prerequisite: permission of the instructor.

345 Architecture and Planning in the Orient (AUP 403) Fall term. Credit four hours. Prerequisite: permission of the instructor. M. Hugo-Brunet. The evolution of urbanization and architecture in India, China, Cambodia, Japan, and Thailand.

346 (436) The Renaissance. Fall term. Credit four hours. Prerequisite: Architecture 141-142 or permission of the instructor. C. Otto. European architecture of the fifteenth and sixteenth centuries.

347 (437) The Baroque. Fall term. Credit four hours. Prerequisite: Architecture 141-142 or permission of the instructor. C. Otto. European architecture of the seventeenth and eighteenth centuries.

348 (438) American Architecture. Spring term. Credit four hours. Prerequisite: permission of the instructor. S. W. Jacobs. Building in the United States from colonial times, with emphasis on the nineteenth and twentieth centuries.

349 (439) Modern European Architecture. Fall term. Credit four hours. Prerequisite: permission of the instructor. A survey of nineteenth and twentieth-century architecture in Europe.

442 (451-452) Historical Seminars in Architecture. Throughout the year. Credit two hours a term. Prerequisite: permission of the instructor. Staff. Students will prepare papers discussing problems relating to design or architecture, using historical evidence as the basis.

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

447 (457) History Workshop. Either term. Credit as assigned. Staff. Consideration of problems often slighted in histories of architecture.

448 (448) Historical Lectures in Architecture. Throughout the year. Credit as assigned.

Prerequisite: permission of the instructor. Staff. A series of one or two lectures per week on topics related to architectural history.

540 (460-461) Introduction to Architectural Aspects of Archaeological Field Work. Either term. Credit two hours. S. W. Jacobs and W. Cumber. For architects, archaeologists, and laymen.

An investigation of architectural techniques used in archaeology.

541 (484) Practice in Architectural Aspects of Archaeological Field Work. Credit as assigned. Staff. Supervised work in the field on excavation, interpretation or restoration of historic architecture.

542 (462) Methods of Archival Research (UPD 404). Spring term. Credit three hours. 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 (464) Case Studies in Preservation Planning. Spring term. Credit two hours. S. W. Jacobs, staff, and visiting lecturers. A review and critique of preservation planning projects selected to indicate the range of current approaches.

545 (465) Design and Conservation (PPRA 844). Fall term. Credit two hours. S. W. Jacobs and B. Jones. Introductory course for preservation planning. The rationale for and methods of utilizing existing cultural and aesthetic resources in the planning and design of regions and cities.

546 (466) Documentation for Preservation Planning (PPRA 845). Spring term. Credit two hours. S. W. Jacobs, staff, and visiting lecturers. Methods of collecting, recording, processing, and analyzing architectural and cultural survey materials.

548 (488) Problems in Modern Architecture. Spring term. Credit two hours. Prerequisite: permission of the instructor. C. Rowe.

640 (470) Seminar in Architecture of the Ancient Near East. Fall term. Credit four hours. W. Cumber. Prerequisite: Architecture 340 or permission of the instructor. Problems in Near Eastern Architectural History.

641 (471) Seminar in Architecture of the Classical World. Spring term. Credit four hours. W. Cumber. Prerequisite: Architecture 341 or permission of the instructor.

Problems in Greek and Roman Architectural History.

643 (473) Seminar in Medieval Art and Architecture. Credit four hours. Prerequisite: permission of the instructor. Not offered in 1973-74.]

646 (476) Seminar in Renaissance Architecture. Spring term. Credit four hours. Prerequisite: Architecture 346 or permission of the instructor. C. Otto.
Historical problems of European architecture of the fifteenth and sixteenth centuries.

647 (477) Seminar in Baroque Architecture. Spring term. Credit four hours. Prerequisite: Architecture 349 or permission of the instructor. C. Otto.
Historical problems in European architecture of the seventeenth and eighteenth centuries.

648 (478) Seminar in the History of American Architecture. Fall term. Credit four hours. Prerequisite: permission of the instructor. 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 (479) Seminar in the History of Modern Architecture. Fall term. Credit four hours. Prerequisite: permission of the instructor.
Problems in modern art and architecture.

Graduate Courses

740 (467-468) Informal Study in the History of Architecture. Throughout the year. Credit as assigned. Prerequisite: permission of the instructor.

840 (491-492) Thesis in Architectural History. Either term. Credit as assigned. Independent study for the Master's degree.

940 (497-498) Dissertation in Architectural History. Either term. Credit as assigned. Independent research by candidates for the Ph.D. degree.

Design Communication

Sequence Courses

151-152 (501-502) Visual Communication I & II. Throughout the year. Credit three hours a term.
Fundamental problems of graphic representation related to the design process, with emphasis on drawing systems, including axonometric and perspective forms.

251 (503) Visual Communication III. Either term. Credit three hours a term. Either term fulfills the second-year requirement.

Advanced problems in graphic representation, including spatial analysis, two and three dimensional transformation systems.

Nonsequence Courses—Photography

350 (525-526) Fundamentals of Photography. Either term. Credit three hours per term. Prerequisite: Arch. 251 or permission of instructor.
A lecture-laboratory introductory course in black-and-white 35mm still photography. Initial emphasis on basic camera skills and dark-room techniques, followed by studies of photographic content through previsualization, interpretation, and media control.

351 Modern Documentary Photography. Fall term. Credit three hours. Prerequisite: Arch. 350.
An advanced course in 35mm black-and-white still photography. Students work individually and in small groups on a series of in-depth photographic essays of social relevance. Present and past attitudes in the field examined through the work of several major documentary photographers.

352 Advanced Photography Workshop. Spring term. Credit three hours. Prerequisite: Arch. 350.
An advanced course in 35mm black-and-white still photography. Concentration on extending the photographer's intuitive abilities to see working compositions and decisive moments in photographing in real-time environments, with emphasis on the human subject.

353 Photographic Tools for Architects. Fall term. Credit three hours. Prerequisite: Arch. 350.
A lecture-laboratory course in advanced applications of photographic technology, including lighting, copying, and duplicating for both black-and-white and color films, directed toward particular tools of value to architects in documentation, analysis, and presentation of design concepts.

354 Large Format Photography, Architectural. Spring term. Credit three hours. Prerequisite: Arch. 350.
An advanced lecture-laboratory course dealing with the special uses, advantages and limitations of large format view-camera photography. Emphasis on control of image perspective and depth of field as applied to architectural photography.

355 Color Photography. Spring term. Credit three hours. Prerequisite: Arch. 350.
An advanced lecture-laboratory course in 35mm color photography, including basic color theory and color balance control through filtration, with emphasis on color previsualization, and on processing color reversal materials. Introduction to negative/positive color systems and applications.

359 Special Project in Photography. Either term. Variable credit hours. Prerequisite: Arch. 350.
Registration and credit by arrangement. Student must submit a written project proposal to an instructor in Design Communication for approval before registration is accepted.

Nonsequence Courses—Design Graphics

356 Photo Silkscreen. Either term. Credit three hours. Prerequisite: Arch. 350 and Art 132.
A lecture-laboratory course investigating the medium of photographic silkscreen, including study of and production with the photo-mechanical process, and the additive theory of color through pigments.

451 Graphic Design I. Fall term. Credit four hours. Prerequisite: permission of instructor.
An introductory studio-lecture course dealing with the design and preparation of material for reproduction in print media. Studies in typography, commonly available printing processes, and the use of photomechanical methods for reproduction.

452 Graphic Design II. Spring term. Credit four hours. Prerequisite: Arch. 451.
Continuation of Arch. 451, with advanced studies and exercises in design for print media.

557 Special Project in Design Graphics. Either term. Variable credit hours. Prerequisite: Arch. 451. Registration and credit by arrangement. Student must submit a written project proposal to an instructor in Design Communication for approval before registration is accepted.

Nonsequence Courses—Motion Film

455 Introduction to Film Making. Fall term. Credit three hours.
A lecture-laboratory course in the basic principles of motion film, in Super-8 and 16 mm formats, both black-and-white and color, including use of the camera and basic editing techniques.

456 Applied Animation. Spring term. Credit three hours. Prerequisite: Arch. 451 or permission of instructor.
A lecture-laboratory course dealing with the theory and application of animation as a communication and study tool, with emphasis on control of time and motion through the use of sequence drawings, inanimate objects, and stop-action filming.

558 Special Project in Motion Film. Either term. Variable credit hours. Prerequisite: Arch. 451 or permission of instructor.
Registration and credit by arrangement. Stu-

dent must submit a written project proposal to an instructor in Design Communication for approval before registration is accepted.

Nonsequence Course—Media Environments

559 Special Projects in Design Communication. Either term. Variable credit hours.
Registration and credit by arrangement. Prerequisite: student must submit a written project proposal to an instructor in Design Communication for approval before registration is accepted.

Architectural Science and Technology

Sequence Courses

261 (703) Introduction to Environmental Science. Fall term. Credit two hours. Spring term. T. Eyerman and R. Crump.
The role of the architect in controlling environment. Natural influences and climatological factors. The body as an environmental control device. Theoretical aspects of behavioral science which relate to physical design.

262 (704) Introduction to Social Sciences in Design. Lecture. Credit two hours. R. MacDougall.
An introduction to methods and concepts in the social sciences for the student in Architecture. Architecture will be treated as a cultural phenomenon. Attention will be focused on how anthropological approaches in particular can be utilized in the study of the built environment. A major aim of the course is to help the student develop the critical capabilities necessary for evaluating social science literature which is either aimed at an architectural audience or which can be construed as relevant to work in the profession.

360 (605) Building Technology, Materials, and Methods. Lecture and workshop. Fall term. Credit three hours. Prerequisites: Architecture 261–262. E. Dluhosch.
Properties of materials, their application to the design of wood, steel and concrete structures. Evaluation of construction methods. Cost factors.

361 (606) Environmental Technology Workshop I. Spring term. Credit two hours. Must be preceded or accompanied by Architecture 362. R. Crump.
The acoustical consultant's, the electrical engineer's, and illumination consultant's tasks in relation to the architect's work. Acoustical and lighting design studies utilizing full-scale mock-ups and specific building type studies. Cost factors.

362 (706) Environmental Controls I. Spring term. Credit three hours. Prerequisite: Architecture 360. 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. Good and bad examples.

461 (607) Environmental Technology Workshop II. Fall term. Credit two hours. Must be preceded or accompanied by Architecture 462. R. Crump.

The mechanical engineer's task and its relation to the architectural design process. Mechanical equipment and its selection, potential developments. Heating and plumbing design studies of specific building types. Full scale and model studies of the role of air movement and temperature in building design. Cost factors.

462 (707) Environmental Controls II. Fall term. Credit two hours. Prerequisite: Architecture 262. R. W. Crump.

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

464 (608) Technological Integration in Design.

Lecture. Spring term. Credit two hours. Prerequisite: Architecture 262. E. Dluhosch. Application of design methodology to the integration of structure, environmental control devices, and construction.

Nonsequence Courses

561-562 (741-742) Special Problems in Architectural Science. Throughout the year. Registration and credit by arrangement. Elective. Staff.

661 (671) Industrialized Building. Fall term. Credit three hours. Permission of the instructor required. E. Dluhosch.

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

662 (640) Environmental Control Systems.

Spring term. Credit three hours. Prerequisites: Architecture 362 and 462. 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 (736) Human Factors in Architecture.

Spring term. Credit three hours. Open to

upperclass and graduate students and to students in related design fields by permission of the instructor. A. Kira.

Introduction to "Human Factors," or "Ergonomics," as it relates to problems of architectural design, detailing, and specification. Normal and special population groups, applications of anthropometric data, activity space requirements, sensory mechanisms, controls and hardware. Emphasis on architectural applications from the viewpoint of user requirements. Lectures, papers, sketch problems.

667-668 (731-732) Architecture in its Cultural Context. Seminar. Throughout the year. Credit three hours. Prerequisite: Permission of the instructor. R. D. MacDougall.

An examination of the relationship between architecture and other aspects of culture. Emphasis on the motivations for particular architectural forms and on theories of architecture formulated in the 'little community.' Examples from Asia and the United States.

Graduate Courses

665 (771) Visual Perception and Architecture. Fall term. Credit three hours. Open primarily to graduate students. Prerequisite: permission of the instructor. J. Gibson, R. Crump, E. Messick.

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

761-762 (781-782) Architectural Science Laboratory. Either term. Credit four to six hours. Open to graduate students only. Projects, exercises, and research in the architectural sciences.

763-764 (791-792) Thesis or Research in Architectural Science. Either term. Credit as arranged. Open to graduate students only.

The Profession of Architecture

Sequence Course

480 (808) The Practice of Architecture.

Spring term. Credit two hours. A seminar for fourth-year students. T. J. Eyerman. Devoted to discussion of the organization of the profession of architecture, professional ethics, client relations, and the position of the architect within society. A summary of all the diverse aspects represented within the actual practice of architecture.

Art

Most courses given in the Department of Art are open to students in any college of the University who have fulfilled the prerequisites and who have the consent of the instructor. All such students must register at the Department office.

Courses in Theory and Criticism

110 (309) Color, Form and Space. Either term. Credit four hours.

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

610 (398) Seminar in Art Criticism. Either term. Credit two hours a term first year. Credit four hours for third term, when theme is written. May be repeated for credit. Three terms required of Master of Fine Arts candidates. Open to graduate students and B.F.A. candidates in their final semester. A study of critical opinions, historical and modern, and their relation to problems in the theory of art.

Studio Courses in Painting

121-122 (301-302) Introductory Painting. Throughout the year. Credit three hours a term. An introduction to the problems of artistic expression through the study of pictorial composition; proportioning, spacing, and the designing of shapes as applied to abstract and representational design. Students will draw as well as paint.

221-222 (303-304) Second-Year Painting—Materials and Methods. Throughout the year. Credit three hours a term. Prerequisite: Art 121 or 122 or permission of the instructor. Study of traditional and contemporary media, from fresco to synthetic resins.

321 (305) Third-Year Painting. Fall term. Credit four hours. Prerequisite: 9-12 studio hours depending on major. Continued study of the principles of painting, the selection and expressive use of materials and media. Group discussions and individual criticism.

322 (306) Third-Year Painting. Spring term. Credit four hours. Prerequisite: 321. Continued study of the principles of painting, the selection and expressive use of materials and media. Group discussions and individual criticism.

421 (307) Fourth-Year Painting. Fall term. Credit four hours. Prerequisite: 322. 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 (308) Senior Thesis in Painting. Spring term. Credit four hours. Prerequisite: 421. Advanced painting project to demonstrate creative ability and technical proficiency.

720 (390) Graduate Painting. Either term. Credit as assigned. May be repeated for credit. For Master of Fine Arts students in painting. The student is responsible, under direction, for planning his own projects and selecting the media in which he is to work. All members of the staff are available for individual consultation, and weekly discussion sessions of works in progress are held.

Studio Courses in Graphic Arts

130 (350) Relief Printing. Either term. Credit three hours. Prerequisite: three credit introductory courses or permission of instructor. Study and practice of methods of printing from the raised surface using wood, linoleum, and plastics. Design and production of the art poster employing the relief print in combination with type.

131 (351) Intaglio Printing. Either term. Credit three hours. Prerequisite: Three credit introductory course or permission of instructor. Study and practice of methods of printing from below the surface. Emphasis will be on the dry-point, hard and soft ground etching, and aquatint.

132 (353) Introductory Silk-screen Printing. Either term. Credit three hours. 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 others of the more commonly used procedures of serigraphy.

230 (352) Advanced Intaglio Printing. Either term. Credit four hours. Prerequisite: Art 131. 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 (354) Plate Lithography. Spring term. Credit three hours. Prerequisite: Art 355 or permission of instructor. 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 (355) Stone Lithography. Fall term. Credit three hours. Prerequisite: Art 130, 131, or 132. The theory and practice of planography, utilizing, and limestone block. The basic lithographic

techniques of crayon, wash, and transfer will be studied.

330 (356) Advanced Silk-screen Printing.

Either term. Credit four hours. Prerequisite: Art 132.

Students who have successfully completed Introductory Silk-Screen Printing will be allowed to enroll in this course which encourages experimentation with the diverse methods and materials available today. Included will be photographic stencils, three dimensional printing; and printing on metal, plastic, and textiles.

331 (357) Advanced Printmaking. Fall term. Credit four hours. Prerequisite: Six hours of graphic art courses.

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

332 (358) Advanced Printmaking. Spring term. Credit four hours. Prerequisite: six hours of graphic art courses.

Continuation and expansion of fall term Advanced Printmaking.

431 (359) Senior Printmaking. Fall term. Credit four hours. Prerequisite: Four courses in printmaking.

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

432 (360) Senior Thesis in Printmaking.

Spring term. Credit four hours. Prerequisite: Four courses in printmaking.

Advanced printmaking project to demonstrate creative ability and technical proficiency.

731-732, 831-832 (392) Graduate Printmaking.

Either term. Credit as assigned. May be repeated for credit. For Masters of Fine Arts students in graphic arts. Prerequisite: permission of instructor.

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

Studio Courses in Sculpture

141-142 (331-332) Introductory Sculpture.

Throughout the year. Credit three hours a term.

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

241-242 (333-334) Second-Year Sculpture.

Throughout the year. Credit three hours a term. Prerequisite: Art 141, 142, or permission of the instructor.

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

341 (335) Third-Year Sculpture. Fall term.

Credit four hours. Prerequisite: Art 242.

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

342 (336) Third-Year Sculpture. Spring term.

Credit four hours. Prerequisite: Art 341. Continuation and expansion of Art 341.

441 (337) Fourth-Year Sculpture. Fall term.

Credit four hours. Prerequisite: Art 342.

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 (338) Senior Thesis in Sculpture. Spring term.

Credit four hours. Prerequisite: Art 441. Advanced sculpture project to demonstrate creative ability and technical proficiency.

840 (393) Graduate Sculpture. Either term.

Credit as assigned. May be repeated for credit. For Master of Fine Arts students in sculpture.

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

Studio Courses in Drawing

151-152 (341-342) First-Year Drawing.

Throughout the year. Credit three hours a term. A basic drawing course in the study of the human figure. Studio work provides experiments in visual concentration (memory drawings) and coordination of hand and eye (contour drawings) as well as the opportunity, in long poses, to combine line and tone in drawings where the relation between anatomical and artistic proportion is studied and design elements are stressed. Contemporary and historical examples of figure drawing are analyzed in discussions.

251-252 (343-344) Second Year Drawing.

Throughout the year. Credit three hours a term. Prerequisite: Art 151, 152, or permission of the instructor.

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. Students may paint as well as draw.

Graduate Thesis

712 (396) Graduate Thesis. Spring term. Credit as assigned.

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

Special Studio Courses

270 (381) Special Studio. Either term. Credit as assigned. May be repeated for credit. For transfer students and others whose standing in the professional sequence is to be determined. May be in painting, sculpture, or graphic arts.

260 (151) Photography. Either term. Credit three hours. Open to upperclass majors and others. Permission of the instructor is required. A basic course in the techniques of still photography. Instruction will be given in the use of the camera and the darkroom. Emphasis will be placed on using the camera as an adjunct to the student's creative vocabulary rather than as a separate creative end. Students are required to provide their own cameras. A course fee will be charged.

370 (401) Studio Concentration. Either term. Credit as assigned. May be repeated for credit. Permission of the instructor is required. For B.F.A. degree candidates who wish a greater concentration in drawing, painting, sculpture or graphics in the upperclass years.

Policy Planning and Regional Analysis

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

410 (410) Introduction to Urban and Regional Theory. Fall term. Credit four hours. W. W. Goldsmith.

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

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

710 (510) Introduction to Urban and Regional Theory. Fall term. Credit four hours. 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.

719 (519) Informal Study in Urban and Regional Theory. Either term. Credit as assigned.

813 (613) Research Seminar in Urban and Regional Social Structure and Policy Analysis.

Spring term. Credit three hours. Permission of the instructor is required. P. Clavel.

An advanced research seminar designed to discuss and investigate some of the implications of urban and regional social structure on the initiation, formulation, and outcome of public policy. Students will undertake their own exploratory research projects on this subject.

814 (614) Urban Economics I. Fall term.

Credit two to four hours. Prerequisite: 510, or Econ. 311-312 or equivalent. T. Vietorisz.

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

815 (615) Urban Economics II. Spring term. Credit two to four hours. Prerequisite: 814. T. Vietorisz.

819 (619) Informal Study in Urban and Regional Theory. Either term. Credit as assigned.

[914 (714) Metropolitan Land Use: Economic Analysis. Fall term. Credit three hours. Prerequisites: 510, 815, 733, and/or permission of the instructor. Not offered 1972-73.

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

915 (715) Location Theory. Fall term. Credit three hours. Prerequisites: 510, 733, and Economics 311-312, or equivalent. W. Isard and F. J. Cesario.

Traditional Weberian location doctrine will be covered. 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 will be paid to Loschian and Christaller systems of urban places. Dynamic aspects of location and urban theory will be explored, with particular emphasis on changing location and spatial distribution patterns.

916 (716) Advanced Seminar in Urban and Regional Theory I. Fall term. Credit two hours. Prerequisite: 510. 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.

917 (717) Advanced Seminar in Urban and Regional Theory II. Spring term. Credit two hours. Prerequisite: 916. B. G. Jones.

A continuation of Planning 916 concentrating on recent developments.

919 (719) Informal Study in Urban and Regional Theory. Either term. Credit as assigned.

Planning Theory and Policy Analysis

420 (420) Policy Planning and Collective Choice. Fall term. Credit four hours. D. F. Williams.

An examination of the problems and prospects of strategic choice, planning and action in contexts in which the allocation and redistribution processes are subject to the direct constraints of collective choice and public policy. There will be a fairly heavy emphasis on the selection of appropriate forms and styles of planning, and the operationalization of conceptual schemes. Both theory-based and model-based frameworks for planning and policy development will be formulated, evaluated, and subjected to actual and simulated reality tests.

425 (425) Theories and Strategies of Social Change. Spring term. Credit three hours. C. Hershey.

Broadly concerned with social change on the theoretical and strategic, structural and behavioral, and micro and macro levels. The principal thrust will be to evaluate the possibilities for major social, cultural, and political changes within an emergent postindustrial society. The first part of the course will consist of an exploration of long-range structural trends in American society, including the articulation of several alternative futures. Focus will be on some salient aspects of the contemporary American political and social context to explore the philosophical and strategic limits of liberalism. In the last part of the course we will turn our attention to a critical evaluation of several current strategies for social change such as social experimentation, social movements, political protest, citizen participation, advocacy, professional protest, new working class theory, and countercultural communities.

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

720 (520) Policy Planning and Collective Choice. Fall term. Credit four hours. D. F. Williams.

An examination of the problems and prospects of strategic choice, planning and action in contexts in which the allocation and redistribution processes are subject to the direct constraints of collective choice and public policy. There will be a fairly heavy emphasis on the selection of appropriate forms and styles of planning, and the operationalization of conceptual schemes. Both theory-based and model-based frameworks for planning and policy development will be formulated, evaluated, and subjected to actual and simulated reality tests.

721 (521) Planning Theory. Spring term. Credit three hours. Prerequisites: 730 and 740. 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 organizational context stressing the impact of alternative organizational models on social decision processes.

729 (529) Informal Study in Planning Theory and Policy Analysis. Either term. Credit as assigned.

820 (620) Planning and Organization Theory. Fall term. Credit four hours. Prerequisite: second-year standing. P. Clavel.

A seminar examining organizational and administrative models relevant to plan formulation and implementation. The themes of hierarchy, control, specialization, representation, professionalization, and organizational development are dealt with in the context of planning

theory and social system change. Applications are made to such programs as community action, regional development, urban renewal, and land-use control.

821 (621) Politics of the Planning Process.

Spring term. Credit four hours. Prerequisites: 510 and 721. P. Clavel.
Theories of the planning process are compared with concepts of political process and political change. Points of tension, overlap, and complementarity are examined in the context of city and regional planning and development agencies, intergovernmental relations, the regulatory process, neighborhood and sub-regional development movements, the national planning agencies. Alternative models for the study of such institutions and processes will be assessed for their usefulness as guides to planners and researchers.

822 (622) Techniques of Planning Implementation and Control.

Fall term. Credit three hours. Prerequisites: 731 and 733. C. Riordan.
The purpose is to examine one subset of new development in interrelated activities. Particular attention will be given to a discussion of the two most well-known versions of the network-based management control system—CPM (Critical Path Method) and PERT (Program Evaluation and Review Techniques). In addition, special attention will be focused upon the use of digital computer simulation as a potentially powerful extension of these systems.

824 (624) Organizational Change and Public Service Delivery Systems.

Fall term. Credit three hours. Prerequisite: 721. C. Hershey.
An examination of the operation of the urban political system and policy-making process with particular emphasis on the service outcomes of local public bureaucracies in the education, health, welfare, manpower, police, and environmental protection fields. Community organization, citizen participation, new careers, decentralization, and community control will be analyzed from the perspective of organizational change.

829 (629) Informal Study in Planning Theory and Policy Analysis.

Either term. Credit as assigned.

920 (720) Seminar in Planning Theory.

Fall term. Credit two hours. Prerequisite: 820 or 821. 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.

929 (729) Informal Study in Planning Theory and Policy Analysis.

Either term. Credit as assigned.

Methods for Planning Analysis

430 (430) Mathematical Concepts for Planning.

Fall term. Credit one, two or three hours. Prerequisite: Permission of the instructor. S. Saltzman.
An introductory course for students having little or no background in college mathematics. Basic concepts in matrix algebra, calculus, and probability will be covered in self-contained units of one credit hour each. Students may register for any or all of these topics.

431 (431) Statistical Analysis for Planning.

Spring term. Credit three hours. Prerequisite: 430 or equivalent and permission of the instructor.
An introduction to basic methods of statistical analysis with an emphasis on their use in the decision-making process in planning. Material in decision theory, sampling, estimation, hypothesis testing, and prediction will be introduced.

433 (433) Planning Analysis.

Spring term. Credit four hours. B. G. Jones.
Development of techniques for measuring population distributions and migrations, location of economic activity, and the development of spatial models.

436 (436) Introduction to Computers in Planning.

Fall term. Credit three hours. S. Saltzman.
An introduction to the use of computers in urban problem solving and planning process.

439 (439) Informal Study in Planning Analysis.

Either term. Credit as assigned.

730 (530) Mathematical Concepts for Planning.

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

731 (531) Statistical Analysis for Planning.

Spring term. Credit three hours. Prerequisite: 730 or equivalent and permission of the instructor.
An introduction to basic methods of statistical analysis with an emphasis on their use in the decision-making process in planning. Material in decision theory, sampling, estimation, hypothesis testing, and prediction will be introduced.

733 (533) Planning Analysis.

Spring term. Credit four hours. Prerequisite: 731. B. G. Jones.
City planning applications of general analytical

techniques of social science, population, economic, and spatial models.

736 (536) Introduction to Computers in Planning. Fall term. Credit three hours. S. Saltzman.

An introduction to the use of computers in the problem-solving and planning processes. Students will run programs on the Cornell computer using PL/1 or another appropriate programming language. Brief introduction to computer systems and the use of library routines. Advantages and limitations of using computers will be considered.

739 (539) Informal Study in Planning Analysis. Either term. Credit as assigned.

830 (630) Planning Public Investments. Fall term. Credit three hours. Prerequisite: second-year standing. C. Riordan.

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

839 (639) Informal Study in Planning Analysis. Either term. Credit as assigned.

930 (730) Seminar in Methods for Planning and Policy Analysis. Fall term. Credit two hours. Prerequisites: Permission of the instructor. S. Saltzman.

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. Specific topics will be selected at the first meeting of the semester.

932 (732) Techniques of Regional Accounting. Fall term. Credit three hours. Prerequisites: 733 and Economics 312 or equivalent. Methods of construction of the regional, social accounts and their application to regional planning. Measuring levels of activity within regions such as income and product accounts are emphasized as well as methods of estimating flows between regions such as balance of payment accounts.

933 (733) Methods of Regional Analysis. Spring term. Credit three hours. 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.

939 (739) Informal Study in Planning Analysis. Either term. Credit as assigned.

Planning Institutions, Programs, and Practice

440 (440) Introduction to Urban Planning Theory and Practice. Three credit hours. An undergraduate course designed to introduce the student to the practice of urban planning within the context of the major bodies of theory utilized in planning. Urban and regional theory and planning theory will be examined, and their usefulness and applications to planning activities and urban problems will be highlighted. The course will strive to place our concerns with these problems within the context of the process of urban growth and development.

441 (441) Field Studies in Urban Policy Planning. Spring term. Credit three hours. Staff.

The student is offered the opportunity to apply theories and techniques of analysis and planning to real problem situations.

442 (442) Internship in Urban Studies and Policy Planning. Summer term. Credit three to six hours. Staff.

740 (540) Introduction to Planning Institutions. Fall term. Credit three hours. P. Clavel. A survey of contemporary organizational forms and political forces facilitating and inhibiting the development of planning at the city, state, and regional level. The development of planning practice in the areas of urban land use, regional economic development, health and welfare, and other services. The focus is on sub-national planning in the United States, but the national context and other nations are dealt with where appropriate.

741 (541) Planning Practice. Spring term. Credit three hours. B. Swift. Application of planning principles and techniques to community situations including working with town and county governments and planning officials to analyze and evaluate community conditions, problems, goals, priorities, resources, and activities. Development of comparative frameworks for policy analysis.

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

840 (640) Field Problem in Planning Methods. Fall term. Credit three hours. Prerequisite: second-year standing. Staff. The student is offered the opportunity to apply theories and techniques of analysis and planning to real problem situations. Some sections will have the opportunity of working

with low-income groups and developing an understanding of how planners can serve such a clientele. Much of the work will be carried out in cities and towns convenient to Ithaca. Other sections will work on plans and programs related to the efforts of official planning agencies. While the course series has been developed primarily for graduate students in other departments, any nondepartmental student who may wish to enroll should contact the faculty members in charge.

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

The follow-up of work begun in PPRA 840 to provide continuous planning services to client groups. PPRA 840 is not prerequisite.

844 (644)—Design and Conservation (Architecture 545). Fall term. Credit two hours. B. G. Jones and S. W. Jacobs.

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

845 (645) Documentation for Preservation Planning (Architecture 546). Spring term. Credit two hours. S. W. Jacobs, staff, and visiting lecturers.

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

849 (649) Informal Study in Planning Practice. Either term. Credit as assigned.

949 (749) Informal Study in Planning Practice. Either term. Credit as assigned.

Urban and Environmental Systems Planning

452 (452) Introduction to Environmental Health Policy. Fall term. Credit three hours. C. Riordan.

An examination of some of the concepts and issues in environmental health planning such as housing quality, occupational health and safety, and environmental protection.

457 (457) The Public Economy of Urban Areas. Spring term. Credit three hours. D. F. Williams.

An examination of the structure, function and impact of the public sector of metropolitan area economies. The framework, theories, and models examined in the course will be specifically related to aspects of the positive and normative rationale behind planning, redistribution and collective choice in the urban public sector.

751 (551) Planning Information Systems. Spring term. Credit three hours. Prerequisite: 736 or equivalent. S. Saltzman.

Consideration of methods and techniques for the design and use of computer-based information systems in planning. The first part of the course will deal with data structures and issues related to the use of data banks for planning purposes. The second part of the course will deal with the use of simulation in planning. Techniques and applications will be introduced. Students will be expected to run their own programs on the Cornell computer.

852 (652) Environmental Health Planning.

Fall term. Credit two hours. Prerequisite: second-year standing.

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.

853 (653) Planning and Evaluation of Environmental Health Programs and Projects.

Spring term. Credit three hours. Prerequisite: second-year standing.

The major focus is an examination of the use of quantitative methods and economic analysis as aids to social decision making with regard to action in the area of environmental health. The purpose is to expose the student who already possesses a methodological competence to the application of these methods in the study of the particular problems of environmental health. Topics to be covered include rational social decision making and environmental health; the economics of environmental quality management; investment models for the size and location of regional systems of waste treatment, water treatment, and solid-waste-disposal facilities; and selected mathematical and statistical models used to describe, explain, or identify selected environmental health problems.

[854 (654) Systems Analysis in Urban Policy Planning. Fall term. Credit three hours. Prerequisite: Some prior work in quantitative methods and policy planning or permission of the instructor. S. Saltzman and D. F. Williams. Not offered in 1972-73.

An examination of the existing and potential uses of systems analysis in policy planning issues. The advantages and limitations of the uses of systems analysis methodology in public policy planning will be explored. Special emphasis will be given to policy aspects of urban problems. Applications of systems analysis to policy questions will be examined. These may include issues in housing, education, health, social services, among others.]

859 (659) Informal Study in Urban Systems Planning. Either term. Credit as assigned.

959 (759) Informal Study in Environmental Health Planning. Either term. Credit as assigned.

Regional Economics and Development Planning

460 (460) Regional Economic Development.

Fall term. Credit four hours.
A focus on problems of and theories about development of lagging underdeveloped or poor regions in industrial nations with emphasis on planning implementations.

860 (660) Introduction to Regional Development Planning.

Fall term. Credit four hours.
Prerequisite: second-year standing. W. W. Goldsmith.
Focus will be on problems of and theories about development of lagging, underdeveloped, or poor regions of industrial nations. Readings will survey various theoretical works upon which regional development planning is, or ought to be, based. The latter parts of the course will deal with the difficult transition from theory to planning recommendations and policy implementation. Brief case studies will be used for illustration.

863 (663) Regional Planning and Development in Developing Countries.

Spring term. Credit four hours. Prerequisite: second-year standing. W. W. Goldsmith.
Selected theories and development problems from PPRA 860 will be elaborated, deepened, and applied. Several extensive case studies of development planning will be analyzed and evaluated with those theories and with criteria suggested by them. Focus will be on 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.

869 (669) Informal Study in Comparative Planning.

Either term. Credit as assigned.

963 (763) Planning Techniques for Developing Regions and Small Nations.

Spring term. Credit four hours. Prerequisite: 860 or 863. 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, e.g., manufacturing, agriculture, health, education and services, infrastructure, urbanization, exports. The problem will be approached with as much realism as possible in an academic setting, with concentration on a particular region. The final product will be a set of plans. Course requirements include minimal general reading, extensive research on a topic of interest, an interim written and verbal report on the research, and a written final report, including proposals, to be summarized in a verbal presentation.

969 (769) Informal Study in Regional Planning.

Either term. Credit as assigned.

Social Planning, Health Systems, and Housing

470 (470) Introduction to Social Policy.

Fall term. Credit three hours. Prerequisites: two introductory social science courses. C. Hershey.
Intended as an introduction to fundamental issues of social policy analysis. Alternative approaches to social policy analysis will be outlined and an analytical framework to manpower, social service, education, and income maintenance policies will be developed and applied. Social policy issues will be viewed within the context of both traditional and emergent theories of inequality. Particular emphasis will be placed on the limitations of contemporary welfare-state social programs in reducing inequality.

770 (570) Introduction to Social Policy.

Fall term. Credit three hours. C. Hershey.
See 470 for description.

773 (573) Urban Social Planning.

Spring term. Credit four hours. D. F. Williams.
A seminar in the theory, process and methodology of social planning in complex urban systems. The analysis of social planning functions will not be restricted to those areas of concentration that have normally been regarded as the purview of the city planning profession. In examining social planning concepts and the behavior of individuals and agencies in different planning contexts, particular attention will be focused on the microstructural and macrostructural impact and ramifications of certain types of nonobvious social planning.

779 (579) Informal Study in Housing Plans and Programs.

Either term. Credit as assigned.

871 (671) Seminar in Social Policy Research and Analysis.

Spring term. Credit three hours. Prerequisite: 770. C. Hershey.
The focus will be on examining contemporary methods of social policy analysis, especially their ideological implications, and developing multidisciplinary approaches to selected social policy issues. The dilemmas of action research and of implementing research findings will be explored.

874 (674) Seminar on Mental Health Planning.

Fall term. Credit three hours. Prerequisite: second-year standing. B. Swift.
Seminar discussions of the development and performance of institutions for the care of the emotionally disturbed, including mental illness, drug abuse, and alcoholism. Analysis of program approaches, philosophies and assumptions of clinical and community care. Emphasis will be placed on planning for processual and spatial aspects of prevention of disorders,

using case studies and existing research as a foundation. Enrollment is limited.

876 (676) Urban Housing. Fall term. Credit four hours. D. F. Williams.

A seminar in housing analysis and policy development with specific emphasis on the problems and prospects of the urban housing sector. The course will interface the economic, social, and institutional forces underlying housing demand and supply with real-world problem-solving and exercises in housing data analysis and policy formulation.

877 (677) Seminar in Comprehensive Health Planning. Spring term. Credit three hours. B. Swift.

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

879 (679) Informal Studies in Social Planning. Either term. Credit as assigned.

970 (770) Colloquium in Social Policy Theory and Practice. Fall term. Credit three hours. Prerequisites: Second year standing and permission of the instructor. Mr. Hershey.

A graduate and faculty level seminar in social policy planning. Each year a major area or issue in social policy will be explored from many perspectives: theoretical, empirical, political, professional, ethical, and moral. Discussion papers and presentations will be sought from faculty, students, and campus visitors.

979 (779) Informal Study in Health Systems Planning. Either term. Credit as assigned.

Planning Research

490 (490) Undergraduate Honors Research. Either term. Credit as assigned.

898 (698) Thesis Research. Fall term. Credit as assigned.

899 (699) Thesis Research. Spring term. Credit as assigned.

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

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

Urban Planning and Development

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

Historical Development of Urban Areas

401-501 (400-500) Historical Development of the World's Cities I. Fall term. Credit four hours. M. Hugo-Brunt.

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

402-502 (401-501) Historical Development of the World's Cities II. Spring term. Credit three hours. Prerequisite: permission of the instructor. M. Hugo-Brunt.

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

403 (602) Architecture and Planning in the Orient (Arch. 345). Fall term. Credit four hours. Prerequisite: permission of the instructor. M. Hugo-Brunt.

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

404 (601) Methods of Archival Research (Arch. 542). Spring term. Credit three hours. 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.

[405 (604) The History of Colonial Planning. Fall term. Credit four hours. Prerequisite:

permission of the instructor. M. Hugo-Brunt.
Not offered in 1973-74.

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

406 (605) Introduction to the History of Landscape Architecture and Design. Spring term. Credit three hours. Prerequisite: permission of the instructor. M. Hugo-Brunt.

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

[504 (603) Seminar in the History of American City Planning. Spring term. Credit three hours. Prerequisite: PPRA 501 or permission of the instructor. J. W. Reys. Not offered in 1973-74.]

509 (409) Informal Study in the Historical Development of Urban Areas. Either term. Credit as assigned. For upper-level undergraduates. Staff.

602 (701) Seminar in American Urban History. Spring term. Credit three hours. Prerequisite: permission of the instructor. 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, intellectual and social responses to the city.

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

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

Urban Planning Principles, Theory, and Process

110 (411-511) Introduction to Urban Planning. Spring term. Credit one hour. May not be taken for credit by those who have taken UPD 411-511. Staff.

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

411-511 (410-510) Introduction to Concepts and Principles of Urban Planning and Development. Fall term. Credit four hours. Upper-level undergraduates admitted only by permission of the instructor. I. R. Stewart.

An examination of city plans and city planning in the United States from the period of colonization to the present time. Following a survey of the history of American planning, the course reviews the major problems of city development and the solutions advanced to improve urban conditions. While major emphasis is placed on issues involving physical development the course also introduces the student to related social, political, economic, and legal matters with which modern urban planning is concerned. Lectures, seminars, reading, and research papers.

413-513 (412-512) Introduction to Human Ecology. Fall term. Credit four hours. H. Hammerman.

An examination of the processes and forms of man's adaptation of and to the physical environment. Since the community is the generalized form of this adjustment, the major focus of the course will be on urban society. The concept of an ecosystem will be rigorously examined from the perspectives of biological ecology, cultural anthropology, and urban sociology. The three perspectives will provide increasingly complex examples of the role of organization in the adaption of activity to territory. Imbalanced ecological relationships and the organizational impact of this imbalance is first considered through an examination of agricultural methods, then considered by examining energy production and waste disposal. A brief overview of regional interactions between cities provides an introduction to the complexities of applying biological models to sociological reality. This is dealt with in greater depth by examining invasion, succession, and competition within metropolitan areas. The readings will include literature representative of the current "ecological crisis" and students will be asked to apply the understanding they have gained from the course to propose solutions to specific planning-related problems. Lectures, discussions, readings, field trips and research papers.

[415 (516) Community Planning for Ethnic Minorities—Mainland Puerto Ricans. Fall term. Credit three hours. Not offered in 1973-74.

A seminar, lecture and reading course which will deal with the characteristics of the Puerto Rican community living in mainland cities. Background to contemporary issues; migration patterns and a statistical profile; mainlanders and islanders; Puerto Rican leadership, organizations, and community development projects.]

512 (514) Urban Economic Analysis. Spring term. Credit four hours. S. Czamanski.

The spatial arrangement of urban functions, value as a determinant of land use, measurement methods, urban structures and forms, public interest and controls, urban renewal and redevelopment, social and economic costs

and benefits, location of residential and industrial areas and retail centers. In addition, topics will include interregional location theory and review of various techniques of selecting optimum locations, the effects of new plants upon regional development, and economic problems of declining open regions. Knowledge of mathematics and of modern quantitative methods is not a precondition for admission, but ability to master them during the course is assumed.

515 (518) Community Development Processes and Programs. Fall term. Credit three hours. W. J. Osby.

Processes of development of community groups and their urban neighborhoods will be examined. The focus will be on the policies and development strategies that are selected and the effectiveness of programs. Of particular interest will be the role that urban minority groups play in the planning and implementation of programs aimed at upgrading the quality of their life and environment. Attention will be given to federal and local programs designed specifically for use by community groups within a larger metropolitan setting. Field work with existing community groups will be an integral part of the course.

612 (611) The Urban Development Process.

Spring term. Credit two hours. Prerequisite: UPD 511 or permission of the instructor. Enrollment limited to twenty students on S-U basis only. Staff.

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, nonprofit builders, and government agencies. Visitors representing these fields of activity will discuss their roles and functions in the urban development process, identify limits on their powers of decision, and indicate how their actions affect others. Assigned readings, seminars, and field trips.

614 (610) Neighborhood Theory. Spring

term. Credit three hours. H. Hammerman. Examination of the concept of neighborhood in urban society. While some theoretical orientation placing neighborhoods in the context of the larger urban society will be reviewed, the major portion of the course will deal with empirical investigations of neighborhood satisfaction, cohesion, and organization. The impact of physical design and natural landscape on these three topics will be considered in depth. Review of neighborhood oriented aspects of the "War on Poverty", public housing, and urban renewal. The class will design and execute one piece of research (generally of a laboratory nature) exploring these topics.

[711 (712) Seminar in Ecological Research.

Fall term. Credit three hours. Open only to advanced graduate students. Not offered in 1973-74. H. Hammerman. Introduction to the instructor's on-going investigation of neighborhood groups involved in combatting land development in a mid-western city. After consideration of the sociological literature in neighborhood satisfaction, neighborhood interaction, and community organization, the students will take on specific research assignments using the compiled data.]

[712 (710) Special Topics in Urban Sociology.

Spring term. Credit three hours. (offered every other year starting in the spring term, 1974.) H. Hammerman. Not offered in 1973-74. An advanced reading seminar in urban sociology. Each time it is given the class, with the instructor, will decide on a general subarea relevant to planning concerns. The class will divide into groups, each group attacking a specific body of literature. Weekly meetings will consist of presentations by each group and general discussion. The class will be aided in this discussion by annotated bibliographies prepared by each group. In addition to studying the work itself the groups will be responsible for researching the professional biographies of the authors considered so that an understanding of the process of intellectual growth can develop.]

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

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

Methods and Techniques of Planning Analysis

421-521 (420-520) Introduction to Quantitative Techniques in Urban Planning. Fall term.

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

[422 (525) Analysis of Socioeconomic Service Systems in Stateside Puerto Rican, Chicano, and Native American Communities.

Spring term. Credit three hours. Prior attendance in AUP 415 desirable but not a prerequisite. Not offered in 1973-74. Service systems in three low-income minority

communities. Discussion by guest speakers, panels, miniconferences, discussion sessions, simulation games, and summary lectures. Practitioners and consumers, administering, delivering and receiving health, manpower training, welfare, education, housing, legal, and economic development services will communicate the problems and types of solutions used in practice (e.g., the practical limitations and strengths in programs such as community mental health centers, in legislation such as the Manpower and Career Development Act, in experiments with low income housing co-operatives, etc.). Field work will be undertaken in the service area with the minority community of interest.]

522 (523) Methods and Techniques of Urban Land-Use Planning. Fall term. Credit three hours. S. Stein.

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

524 (527) Workshop in Heuristic Gaming Techniques. Spring term. Credit three hours.

H. Hammerman.
Simulation gaming has gained a prominent place in planning education. Students will be introduced to a large variety of urban and social simulation games; they will be taught to administer such games and will be given the opportunity to create modifications of existing games and to build their own.

622 (522) Methods of Field Research in Urban Planning. Spring term. Credit four hours.

H. Hammerman.
A practicum in social survey techniques. The students will isolate an important research question applicable to planning problems in the Ithaca area, design a questionnaire, administer it, code and analyze the data, and prepare and present a report. Fundamentals of questionnaire construction, interviewing techniques, sample design, index construction, general survey administration, and data analysis will be covered.

721 (620) Seminar in Regional Social Accounting. Fall term. Credit three hours.

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

821 (724) Seminar in Regional Development Models. Fall term. Credit three hours. Prerequisite: UPD 721 or 822, or equivalent, or permission of the instructor. S. Czamanski.
Elements of a model, calibrating and simulation. Treatment of capital accumulation, existing resources, stability, disembodied and embodied technical progress. Vintage models, problems of capital valuation and capacity. Labor and migrations, balanced and unbalanced growth. The Harrod-Domar model, the two gaps, shift analysis. Some two- and multisector models.

[822 (721) Seminar in Regional Interindustry Analysis and Programming. Spring term. Credit three hours. S. Czamanski. Not offered in 1973-74.

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

[824 (725) Econometric Methods in Regional Planning. Spring term. Credit three hours. Continuation of AUP 821. S. Czamanski. Not offered in 1973-74.

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

Planning and Development Controls and Implementation

131 (430) Controls and the Planner and Architect. Fall term. Credit three hours.

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

432 (524) Transportation and the Urban Environment (Arch. 613). Spring term. Credit two hours. S. Stein, P. Cohen, and A. Meyburg.
A weekly seminar dealing primarily with the problems in United States urban transportation. Minimally technical, the material investigated will include: historic, current and future modes; aesthetic and environmental conditions; linkage with intercity systems; mass transit versus the private car; the pedestrian; etc. The objectives are: to broadly examine transportation within

the urban context from an aesthetic, operational, and political viewpoint; to establish dialogues between our different disciplines—architecture, engineering and planning—and develop an awareness of the problems seen through the eyes of different professionals; to examine the interrelationship of various transportation means and suggest the optimum balance and its advantages. The seminar is offered to upperclassmen and graduate students and will have sufficient flexibility to permit specific investigations by individual students. Courses, more technically oriented, are available through the Department of Environmental Engineering. There will be no examinations but a term paper, based upon a class presentation, will be required.

434 (533) The Impact and Control of Technological Change. Cosponsored by STS. Spring term. Credit four hours. Visiting Speakers and Sections. D. Nelkin. Examination of social, environmental, and economic implications of technological change in the United States in the context of present policies and strategies of control. Several specific cases will be considered in detail followed by a broader investigation of the problems of a modern technological society. Alternative political-economic solutions will be explored. Interdisciplinary, with weekly guest speakers. Students will participate in a research project to develop a case study.

531 (632) Suburbanization and New Communities. Fall term. Credit three hours. Prerequisite: permission of the instructor. I. Stewart. Beginning with an investigation of metropolitan growth patterns and the use of regional open space in shaping the form of urban development, the seminar concentrates on the major issues involved in suburban development and role of new communities in accommodating expected future population. Historical and contemporary examples of new towns programs in the United States and abroad are examined, and current and proposed state and federal legislation is reviewed. Seminars, assigned reading, research papers.

533 Environmental Control Systems (Arch 662). Spring term. Credit three hours. H. Hammerman and R. Crump. The problems of man-environment systems will be approached from two viewpoints: as physical structures and devices; and as social arrangements, laws, and culture. Through the method of continuing debate the two instructors will critically analyze present methods of pollution and environmental control in cities. Laboratory sessions will attempt to actualize these viewpoints through physical models and simulation exercises. The entire class will participate in a term project.

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

[631 (630) Urban Land Policy and Programs. Fall term. Credit three hours. Prerequisite: UPD 632 or permission of the instructor. J. Reps. Not offered in 1973-74. Consideration of major problems of urban land control and management and possible solutions. Subjects for discussion include taxation as a method of land-use planning, compensation and betterment, large-scale public land acquisition, subsidies and incentives, and acquisition of development rights or easements. Several public planning systems of other countries will be studied, contrasted with the United States, and evaluated.]

632 (531) Legal Aspects of Planning. Spring term. Credit three hours. Prerequisite: UPD 511 or permission of the instructor. B. Kelly. Legal aspects of preparing and administering zoning ordinances, subdivision regulations, housing codes, official map regulations, and related subjects.

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

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

Physical and Aesthetic Aspects of the Urban Environment

441 (440) Introduction to Environmental Planning and Design. Fall term. Credit four hours. (Undergraduate registration for UPD 541). K. Grey.

541 (540) Introduction to Environmental Planning and Design. Fall term. Credit four hours. For graduate planning students. All other students must obtain permission of the instructor. K. Grey. An introduction to the basic concepts and issues of environmental planning and design. Topics covered will include the structure of space and function and the interrelations between them within the context of a range of designed and undesigned environments. Basic techniques of representation (graphic and non-graphic), analysis, and modeling will be reviewed and an understanding of the design process developed. No previous training in design is required.

542 (541) Planning Design. Spring term. Credit four hours. Prerequisite: UPD 541. S. Stein. An analysis of the requirements of program and

context and their reformulation of as determinants of spatial organization. Emphasis will be placed on the development of spatial concepts based on prepared evaluation of the site, taking into consideration the influences of functions, culture and life styles, and other ecological factors, as well as the development of a framework for evaluating the nonphysical implications of existing physical-spatial organizations in different environmental contexts. The necessary theories, methods, and techniques of planning design introduced in 541 will be elaborated upon and applied in studio problems.

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

641 (640) Seminar in Urban Design. Fall term. Credit three hours. Prerequisite: Arch. 301, or UPD 541, or permission of the instructors. K. Grey, or Staff. 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.

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

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

Urban Renewal and Housing

452–552 (451–551) Introduction to Government Programs for Urban Renewal. Spring term. Credit three hours. S. Stein, or Staff. A survey course reviewing the development of governmental policy in the urban renewal field. A presentation of the major governmental programs at the federal and state levels aimed at renewing and developing cities and improving housing conditions in the United States. Several important case studies are examined.

551 (653) Social Facilities for Large Scale Housing Developments. Spring term. Credit three hours. Prerequisite: permission of the instructor. B. Kelly. Analysis of the special problems in urban design and in the provision of community facilities resulting from the current encouragement of industrial methods, scale, and speed in housing. Attention will be concentrated on the social requirements encountered in large-scale developments, and on the administrative procedures by which these requirements may be met.

Experience in European countries, where government agencies directly administer such developments, will be cited.

652 (651) Urban Politics and Planning. Spring term. Credit three hours. I. Stewart. A consideration of the political dimension of planning and renewal activities. Emphasis on governmental mandate and structure, as well as interest group and power relationships as they are related to developmental decision-making processes. Theory and case study analyses.

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

959 (759) Informal Study in Urban Renewal and Housing. Either term. Credit as assigned. Ph.D. Level. Staff.

Institutional and Public Facilities Planning

[562 (661) Institutional Planning. Spring term. Credit three hours. Prerequisite: UPD 511, or permission of the instructor. K. Parsons, and visitors. Not offered in 1973–74. A seminar in programming and area planning of facilities for institutions including universities, medical centers, and churches. Administrative organization, space use studies, program development, location and function analysis, enrollment projection, and institutional systems. Application of city planning techniques to institutional planning.]

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

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

Urban Planning Fieldwork and Practice

Field work in urban planning and development problems may be taken upon completion of appropriate academic course and approval of the instructor of that course. In certain cases the appropriate course may be taken at the same time as the field work. If the proposed field work is not part of a regularly organized field work course, arrangements for faculty supervision and evaluation of the field work must also be approved in advance.

570 Comprehensive Planning Workshop. Either term. Credit four hours. Prerequisite: UPD 511. S. Stein, B. Kelly, and Staff. Research and analysis in an urban area leading to the preparation of comprehensive and functional area plans and effectuation programs;

lectures, field trips, and individual and group reports.

571 (575) Urban Renewal and Housing Workshop. Spring term. Credit four hours. Prerequisite: UPD 552. S. Stein.

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

572 Community Facilities in Large-Scale Developments. Spring term. Credit four hours. Prerequisite: UPD 551. B. Kelly. Fieldwork section for AUP 551.

[573 (574) Community Organization Workshop.

Either term. Credit four hours. Prerequisite: permission of the instructor. H. Hammerman. Not offered in 1973-74.

A practical course designed for students who intend to work with community groups. It will present two theoretical approaches to community organization and the practical implications of each to the professional committed to intervention. Will largely be a workshop to teach the detailed methods of working with community groups including process recording, planning interventions, working with groups split by factions, professional use of self and the use of resources outside the community. Ethical problems inherent in this kind of work will be extensively discussed. The students will engage in several group observations and play relevant simulation games.]

574 (572) Program Planning for Minority Groups. Either term. Credit four hours. Prerequisite: permission of the instructor. S. Stein, or Staff.

Will familiarize students with the practical problems of organization, planning, programming, and development of an urban minority community action group. Students will be offered an opportunity to apply planning skills to help such a group define and meet the needs of its people. An additional objective is to provide the opportunity for students to learn more about a specific minority group, and to begin to understand the cultural, social, and other characteristics of such a population.

[575 Historic Area Preservation. Spring term. Credit four hours. Prerequisite: PPRA 844-Arch. 545 or permission of the instructor. S. Stein. Not offered in 1973-74. Preparation of surveys, analyses, plans and programs for preservation of historic areas of small or large communities.]

[576 (578) Urban Communications Workshop. Spring term. Credit four hours. Prerequisite: permission of the instructor. S. Stein, or Staff. Not offered in 1973-74.

Methods and techniques for developing community information networks for the presentation and understanding of urban planning and development problems, policies and programs. Special attention will be given to the use of the television media and newspapers in cooperation with local facilities in the Ithaca area.]

579 Special Problems in Fieldwork. Either term or summer. Credit four to six hours. Staff. Arrangements for enrollment and credit shall be made with the agreement of a faculty member and with the approval of the entire UPD faculty.

770 (672) Internship Program in Urban Planning and Development. Summer term. Credit three hours. Open to graduate students in planning and others by permission. S. Stein, Staff, and Visiting Lecturers.

Summer internship in the New York metropolitan area in public or private planning, housing, urban renewal and development agencies. Positions also available in various functional agencies dealing with transportation, recreation, water resources, etc. Occasional openings with citizen groups and private consulting firms. Full-time work at current salaries supplemented with evening lectures and discussions two evenings a week. In addition, there are several field trips in the New York area and to other east coast cities. (Instruction period for the course in the New York program is limited to July and August.)

772 (674) Internship Program at the Newark Urban Institute. Fall term, spring term, or summer. Credit variable by decision of the department faculty. Open to graduate students in planning and others by permission. S. Stein, Staff, and Visiting Lecturers.

Involvement in the planning, policy formulation, and administration of a large American city. The program will expose students to the philosophies and techniques of managing public programs in urban communities. The course work will be in residence in the City of Newark. Students will be assigned as full-time staff members in various city departments or agencies where they will have direct responsibility for defining a project, identifying problems, preparing alternative solutions, and planning new and innovative programs and policies. Supervision will be provided primarily by members of the staff of the city of Newark. In addition, students will participate in academic courses offered on site in Newark by faculty members from the consortium of universities cooperating in the Institute program.

Landscape Planning and Design

481 Contemporary Issues in Landscape Architecture. Fall term. Credit three hours. Open to advanced undergraduates by permission of instructor. J. Gentili.

Current issues in landscape architecture will be addressed, including the role of the landscape architect in contemporary society. Recent technological, methodological, and legislative developments will be evaluated in terms of their effects on the role of the landscape architect.

581 Landscape Planning and Design Workshop. Fall term. Credit four hours. J. Gentili, Staff, and Visitors.

A project-oriented course designed to integrate various disciplinary and professional skills in designing environmental modifications that optimize relationships with ecological systems. Various elements of the land modification process will be addressed, including suitability-impact analysis, planning, design, and management. Intended to heighten student awareness of ecological systems factors in planning and design; to develop skills in the practical analysis and synthesis of data and in the verbal and visual communication of alternatives to a client group. The orientation to a real client group will compel awareness of temporal and economic constraints and serve as an introduction to project administration.

582 Landscape Planning and Design Workshop. Spring term. Credit four hours. Prerequisite: UPD 581. J. Gentili, Staff, and Visitors. Continuation of work undertaken in UPD 581.

682 Social Factors in Landscape Design.

Spring term. Credit three hours. J. Gentili. An introduction to the use of social science findings and structured observational techniques in landscape design. User behavior in local open spaces will be observed, analyzed, and evaluated. Assessment of the quality of existing local open spaces will lead to the design of a space which emphasizes safety and utility among other user needs.

Urban Planning and Development Research

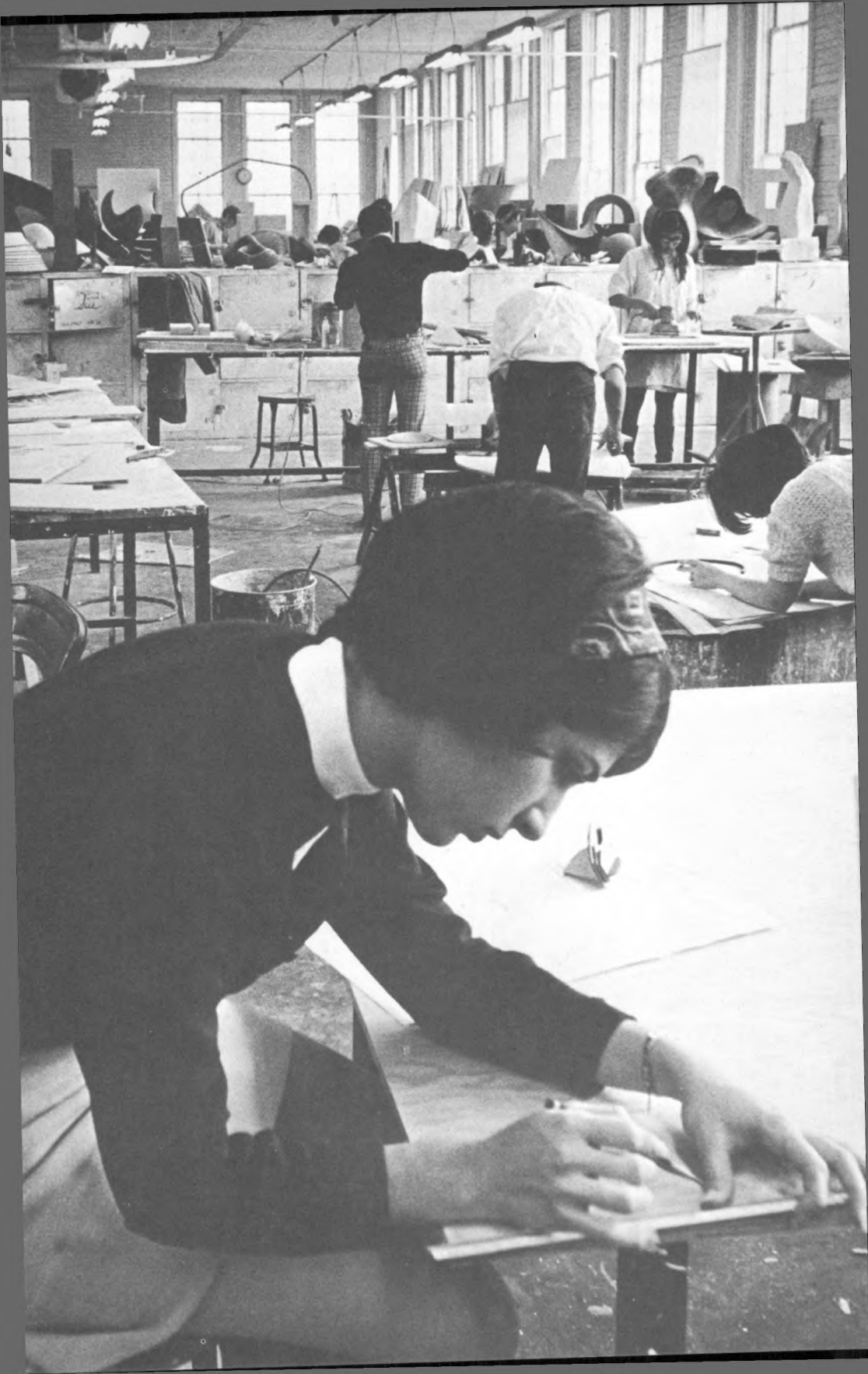
490 (490) Undergraduate Honors Research. Either term. Credit as assigned. Staff.

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

890 (790) Planning Research Seminar. Fall and spring terms. Credit one hour. Staff.

899 (699) Thesis in Urban Planning and Development. Either term. Credit six hours. Staff.

999 (799) Dissertation in Urban Planning and Development. Either term. Credit as assigned. Staff.



Cornell University

Register

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Robert T. Horn, Vice President and Chief
Investment Officer
Samuel A. Lawrence, Vice President for
Administration
E. Hugh Luckey, Vice President for
Medical Affairs
Thomas W. Mackesey, Vice President for
Planning
Paul L. McKeegan, Vice Provost
Arthur H. Peterson, University Treasurer and
Chief Fiscal Officer
Richard M. Ramin, Vice President for
Public Affairs
Robert F. Risley, Vice Provost
Neal R. Stamp, Secretary of the Corporation
and University Counsel

College Administration

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

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Robert F. Gatje	Michael Rapuano
Jonathan King	Geraldine Knight Scott
Robert S. Kitchen	Erik A. Svenson

Faculty

Architecture

O. Mathias Ungers, Chairman, Dipl.Ing. (Berlin),
Professor of Architecture
Stuart M. Barnette, B.S. in Arch., Professor of
Architecture, Emeritus
Hubert E. Baxter, B.Arch., Professor of
Architecture, Emeritus
Ludlow D. Brown, M.Arch., Professor of
Architecture, Emeritus
Thomas H. Canfield, B.S. in Arch., Professor of
Architecture
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., Assistant Professor of
Architecture
W. Willson Cummer, B.A., M.A., Ph.D., Assistant
Professor of Architecture
Michael D. Dennis, B.Arch., Assistant Professor
of Architecture
Eric Dluhosch, B.Arch., M.Arch., Assistant
Professor of Architecture
Donald P. Greenberg, B.C.E., Ph.D., Associate
Professor of Architecture
Keith H. Grey, B.Arch., L.Arch., M.Arch.,
Assistant Professor of Architecture
John A. Hartell, B.Arch., Professor of
Architecture, Emeritus
George Hascup, B.Arch., Assistant Professor of
Architecture
Klaus Herdeg, B.Arch., M.Arch., Associate
Professor of Architecture
Lee H. Hodgden, B.S.Arch.Engr., 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
Alexander Kira, B.Arch., M.R.P., Professor of
Architecture
Alfred Koetter, B.Arch., M.Arch., Lecturer
Wojciech G. Lesnikowski, M.A., M.U. in
Arch., Associate Professor of Architecture
Robert D. MacDougall, B.Arch., Ph.D., Assistant
Professor of Architecture

Archie Mackenzie, B.Arch., Assistant Professor of Architecture
 R. Eugene Messick, B.Prod.Design, Assistant Professor of Architecture
 Eugene David Montillon, B.Arch., Professor of Landscape Architecture, Emeritus
 Christian Otto, B.A., M.A., Ph.D., Assistant Professor of Architecture
 Charles W. Pearman, B.Arch., Professor of Architecture; Associate Dean of the College of Architecture, Art and Planning
 Andrzej Pinno, B.F.A., M.Arch., Visiting Associate Professor of Architecture
 Henry W. Richardson, B.Arch., M.Arch., M.R.P., Assistant Professor of Architecture
 Colin Rowe, B.Arch., M.A., Professor of Architecture
 Francis W. Saul, B.S., M.S., P.E., Associate Professor of Architecture
 Werner Seligmann, B.Arch., Associate Professor of Design
 John P. Shaw, B.Arch., M.Arch., Associate Professor of Architecture
 David M. Simons, B.S.C.E., M.Arch., Associate Professor of Architecture
 Stuart Stein, B.Arch., M.C.P., Professor of Urban Planning and Design
 Frederick M. Wells, B.Arch., Andrew Dickson White Professor of Architecture, Emeritus
 J. Alan Wells, B.Arch., Adjunct Associate Professor of Architecture

Art

Kenneth Evett, A.B., M.A., Professor of Art, Chairman
 Zevi Blum, B.Arch., Visiting Critic in Art
 John E. Bosson, Jr., M.F.A., Assistant Professor of Art
 Thomas R. Burton, B.Arch., M.F.A., Assistant Professor of Art
 Victor Colby, A.B., M.F.A., Professor of Art
 Norman D. Daly, B.F.A., M.A., Professor of Art
 Friedel Dzubas, Visiting Critic in Art
 John A. Hartell, B.Arch., Professor of Art, Emeritus
 James O. Mahoney, A.B., B.F.A., F.A.A.R., Professor of Art
 Gillian Pederson-Krag, B.F.A., M.F.A., Associate Professor of Art
 Steve Poleskie, B.S., Assistant 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
 May Stevens, B.F.A., M.A., Visiting Critic in Art
 Edward G. Thompson, B.F.A., M.F.A., Assistant Professor of Art
 Phyllis Thompson, B.F.A., M.F.A., Assistant Professor of Art

Policy Planning and Regional Analysis

Barclay Jones, B.A., B.Arch., M.R.P., Ph.D., Chairman; Professor of City and Regional Planning; Associate Director for Training

Programs, Center for Urban Development Research
 Francis J. Cesario, Ph.D., Visiting Assistant Professor of Regional Science and Planning
 Pierre Clavel, A.B., M.R.P., Ph.D., Associate Professor of City and Regional Planning; Assistant Professor of Rural Sociology
 William W. Goldsmith, B.S.C.E., Ph.D., Assistant Professor of City and Regional Planning
 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
 David B. Lewis, B.S., M.S., Ph.D., Assistant Professor of City and Regional Planning
 Kermit C. Parsons, B.Arch., M.R.P., Professor of City and Regional Planning; Dean of the College of Architecture, Art and Planning
 Courtney Riordan, B.S.C.E., Ph.D., Assistant Professor of City and Regional Planning
 Sidney Saltzman, B.S., M.S., Ph.D., Professor of Planning
 Bert Swift, B.A., M.P.A., Ph.D., Assistant Professor of City and Regional Planning; Assistant Professor of Agriculture Extension
 Thomas Vitorisz, S.M., Ph.D., Visiting 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

Urban Planning and Development

Stuart W. Stein, B.Arch., M.C.P., Chairman; Professor of Urban Planning and Design
 Stanislaw Czamanski, Lic. es Sc. Comm., Ph.D., Professor of City and Regional Planning
 Robert Dormer, B.S., Visiting Lecturer in Urban Planning and Development
 Joseph Gentili, M.L.A., B.A., Assistant Professor of Landscape Architecture
 Keith H. Grey, B.Arch., M.U.D., Assistant Professor of Architecture
 Howard H. Hammerman, B.A., M.S.W., Instructor in Urban Planning and Development
 Michael Hugo-Brunt, B.Arch., M.C.D., M.Arch., Associate Professor of City and Regional Planning
 Burnham Kelly, A.B., M.C.P., J.D., Professor of City and Regional Planning
 Thomas W. Mackesey, B.Arch., M.C.P., Professor of Regional Planning
 Dorothy W. Nelkin, B.A., Associate Professor of Planning
 William J. Osby, B.A., Lecturer in Urban Planning and Development
 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
 Ian R. Stewart, B.A., M.R.P., Ph.D., Assistant Professor of City and Regional Planning
 Oliver C. Winston, B.A., B.S. in Arch., Lecturer in City and Regional Planning

Elected Members of the Faculty

Marvin I. Adelman, B.S., M.S., Associate
Professor in Landscape Architecture
Joseph A. Carreiro, B.S. in Ed., Professor,
Chairman, Design and Environmental
Analysis
Martie W. Young, A.B., M.A., Ph.D., Professor,
History of Art

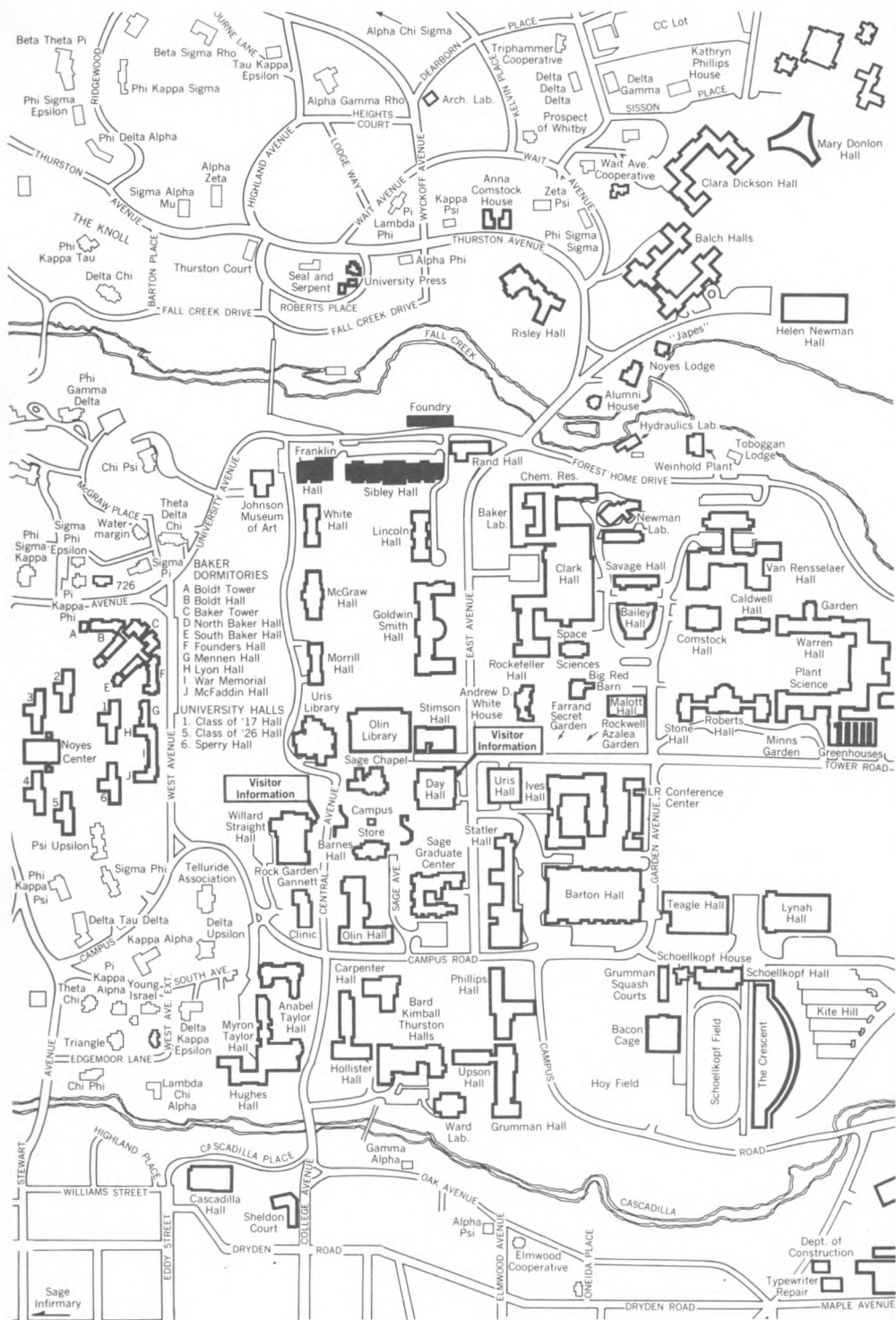
Student Body, Fall 1973

Total Enrollment	610
Undergraduates	425
Architecture	330
Art	95
Men	305
Women	120
Graduates	185
Architecture	45
Art	12
Planning	120
Landscape Architecture	8
Men	144
Women	41

Geographical Distribution

United States	622
Alabama	3
California	17
Colorado	1
Connecticut	27
Delaware	5
District of Columbia	16
Florida	3
Georgia	5
Illinois	25
Indiana	8
Iowa	1
Kansas	1
Kentucky	2
Maine	2
Maryland	24
Massachusetts	39
Michigan	7

Minnesota	3
Mississippi	1
Missouri	8
Nebraska	1
Nevada	1
New Hampshire	3
New Jersey	60
New Mexico	2
New York	242
North Carolina	2
Ohio	31
Oregon	4
Pennsylvania	33
Puerto Rico	14
Rhode Island	4
Tennessee	3
Texas	2
Utah	1
Vermont	3
Virginia	8
Washington	1
West Virginia	1
Wisconsin	8
Foreign	51
Argentina	1
Australia	1
Canada	7
Colombia	1
Cuba	1
England	6
France	1
Ghana	1
Greece	4
Holland	1
Hong Kong	3
India	1
Iran	2
Japan	4
Korea	1
Malaysia	1
Nigeria	3
Pakistan	3
Sweden	1
Switzerland	1
Thailand	1
Turkey	1
Uganda	1
Venezuela	4



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.

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College of Architecture, Art, and Planning
College of Arts and Sciences
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Graduate School of Business and Public Administration
Field of Education (Graduate)
College of Engineering
Engineering at Cornell
Graduate Study in Engineering and Applied Sciences
General Information*
Graduate School
Graduate School: Course Descriptions
School of Hotel Administration
New York State College of Human Ecology
New York State School of Industrial and Labor Relations
Law School
Medical College (New York City)
Graduate School of Medical Sciences (New York City)
Cornell University—New York Hospital
School of Nursing (New York City)
Graduate School of Nutrition
Officer Education (ROTC)
Summer Session
New York State Veterinary College

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

Requests for the publications listed above should be addressed to

Cornell University Announcements
Edmund Ezra Day Hall
Ithaca, New York 14850.

(The writer should include his zip code.)