# Columbia University School of Architecture

BULLETIN 1970/1971

# *Directory*

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ADMISSION • GENERAL INFORMATION
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Columbia University Health Service, St. Luke's Hospital, 1091 Amsterdam Avenue (between 113th and 114th Streets), New York, N.Y. 10025. Telephone 870-6566

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For men and married graduate students: Residence Halls Office, 125 Livingston Hall. Telephone 280-2775
For women: Johnson Hall Office, 411 West 116th Street, New York, N.Y. 10027. Telephone 280-4494

HOUSING OFF CAMPUS
International House, 500 Riverside Drive, New York, N.Y. 10027. Telephone MO 6-7600
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TRANSCRIPTS OF RECORDS
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# School of Architecture

*1970-1971*

*Columbia University in the City of New York*

# Contents

# The School of Architecture at Columbia

The School of Architecture provides professional education in those aspects of growth and environment which advance man's condition and that of the community in which he lives. The educational process is based on the analysis and critical evaluation of cultural patterns, values, and natural conditions, and is directed toward a comprehensive view of the environment: by developing in the student a self-awareness and understanding of the significance of his own experience and belief; by increasing his ability to make decisions based on thorough analysis; by introducing the many forms of creative expression; by interpreting the present as a part of a historical process; and by developing the skills needed to render effective his professional aims. The presence of three areas of study—architecture, architectural technology, and planning—within a single school makes possible a better understanding of the forces entering into the creation of environment and the interdependency of these forces.

## ► PROGRAMS OF STUDY

The programs of study are administered by the School through its three divisions —architecture, architectural technology, and urban planning—and through the Institute of Urban Environment. A program leading to the Bachelor of Architecture degree is offered in the division of architecture; programs leading to the Master of Science degree are offered in all three divisions.

In order that the goals of the School reflect the changing needs of the professions and their students, each division has an elected student-faculty council which defines the goals, curriculum, and structure of that division. An Executive Council, comprised of members from the divisional councils, is responsible for the determination of School-wide goals and the coordination of program and curriculum.

Candidates for the Ph.D. degree may specialize in programs offered in all three divisions, but work toward the degree is administered by the Joint Committee on Graduate Instruction of the Graduate Faculties, not by the School of Architecture. Candidates register in the Graduate Faculties, and programs of study are individually arranged. Each candidate's work is supervised by a standing committee appointed by the Dean of the Graduate Faculties. The admissions section of this bulletin should also be consulted (see page 58).

## ► LOCATION AND FACILITIES

The School, located in Avery Hall, has excellent drafting rooms, studios, classrooms, a lounge, exhibition galleries, a completely equipped workshop for making scale-models, and a photography laboratory.

The resources of the world's leading architectural library, the Avery Memorial Library, are available to the students of the School. Founded by Samuel Putnam Avery in 1890 as a research collection of the important books on architecture and the related fields, it has since grown into what can be called the national library of the profession. It is ranked by scholars from all over the world as the outstanding international research center on the history of architecture. Its holdings consist of over 85,000 books and periodicals on architecture, urban planning, archaeology, the decorative arts, and a broad variety of related background material. The contents range from the first published book on architecture, L. B. Alberti's *De Re Aedificatoria* (1485), to a unique collection of books on the contemporary architectural movement. In addition, the library has over twenty thousand original architectural drawings, collections of prints, and rare photographic material. Among the book treasures are a virtually complete sequence of the manifold early Vitruvius editions; all the first editions of the works of Palladio, Vignola, and Serlio; the great books by Marot, Du Cerceau, and Blondel. The Manuscripts and Drawings Collection includes the famous Serlio manuscript; a large number of eighteenth-century English and nineteenth-century American architectural drawings; and, of more recent origin, the notebooks and many of the drawings of Louis Henry Sullivan. Avery Library also contains the most extensive and up-to-date periodical catalogue in the field of architecture.

The Ware Memorial Library, adjacent to the undergraduate drafting rooms, is designed as a working library for the everyday use of the students. It contains more than two thousand books, a collection of nearly twenty thousand photographs, and the major professional periodicals from the United States and Europe.

To the resources of the city and the School are added the resources of a great university and its numerous divisions and departments, including the School of Engineering and Applied Science, the School of Public Health and Administrative Medicine, and Teachers College. The special and unique advantages of Avery Library are enhanced by access to the other libraries of the University.

The Columbia University Computer Center, between Uris and Havemeyer Halls, has available advanced digital computing equipment (at present, principally an IBM System/360 Model 75 and a System/360 Model 91) and related auxiliary equipment for use in academic research projects and in other educational activities requiring computing. Professional programmers are available at the Center to advise and guide persons who use the equipment. Short, noncredit courses are offered by the staff of the Center for qualified students and faculty members.

# Faculty of Architecture

William J. McGill, Ph.D. *President of the University*

Polykarp Kusch, Ph.D., Sc.D. *Vice President and Dean of Faculties of the University*

Kenneth Alexander Smith, B.S. *Dean of the Faculty of Architecture*

Charles Abrams. *Professor of Urban Planning*

LL.B., St. Lawrence, 1922. Member, American Institute of Planners; Association of the Bar of the City of New York. Honorary member, American Institute of Architects, New York Chapter.

Harry Antoniades Anthony. *Professor of Urban Planning*

B.Arch., National Technical University (Athens), 1945; M.C.P., Institute of City Planning (Paris), 1947; D.d'Univ., Sorbonne, 1949; Ph.D., Columbia, 1955. Member, American Institute of Planners; American Institute of Architects; American Society of Planning Officials; Regional Plan Association; Academy of Political Science; National Association of Housing and Redevelopment Officials. Licensed professional planner.

Curtis Jay Berger. *Professor of Law (on leave, academic year)*

B.A., Rochester, 1948; LL.B., Yale, 1951.

Robert H. Chapman. *Adjunct Associate Professor of Architecture*

M.B., M.A., Oxford, 1943; B.Arch., Harvard, 1950. Member, American Institute of Architects. Registered architect.

Victor F. Christ-Janer. *Adjunct Professor of Architecture*

B.F.A., Yale, 1942; B.Arch., 1947; D.F.A. (hon.), Lake Erie, 1967. Danforth Lecturer. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate.

George R. Collins. *Professor of Art History*

B.A., Princeton, 1939; M.F.A., 1942.

Francis Ferguson. *Assistant Professor of Urban Planning*

B.Arch., Notre Dame, 1956; M.S., Columbia, 1962; Ph.D., 1969. Member, American Institute of Architects; American Society of Planning Officials; Regional Plan Association; Architectural League of New York. Registered architect.

James Marston Fitch. *Professor of Architecture*

University of Alabama, 1926; Tulane University, 1928. Member, American Society of Architectural Historians; Architectural League of New York; American Association for Advancement of Science; Municipal Art Society.

Alfred Knox Frazer. *Professor of Art History, Archaeology, and Architecture*

B.Arch., Alabama Polytechnic Institute, 1949; M.A., New York University, 1958; Ph.D., 1964. Registered architect.

David H. Geiger. *Assistant Professor of Architecture*

B.S., Drexel Institute of Technology, 1958; M.S., Wisconsin, 1960; Ph.D., Columbia, 1967; William Kinne Fellows Traveling Fellow, 1967. Member, American Concrete Institute. Associate member, American Society of Civil Engineers. Registered engineer.

Romaldo Giurgola. *Ware Professor of Architecture*

Architect, University of Rome, 1948; M.S., Columbia, 1951. Member, American Institute of Architects. Member, Italian Order of Architects. Registered architect.

Percival Goodman. *Professor of Architecture*

B.A., University of the State of New York, 1936. Paris Prize, 1925. Fellow, American Institute of Architects; International Institute of Arts and Letters. Registered architect. N.C.A.R.B. certificate.

Sigurd Grava. *Associate Professor of Urban Planning*

B.C.E., College of the City of New York, 1955; M.S., Columbia, 1957; Ph.D., 1965. William Kinne Fellows Traveling Fellow, 1958. Member, American Institute of Planners; American Society of Civil Engineers. Licensed professional planner.

John A. Hagman. *Associate Professor of Graphics*

B.Arch., Columbia, 1945; M.S., 1949. Member, American Society for Engineering Education; Association of Collegiate Schools of Architecture. Registered architect. N.C.A.R.B. certificate.

Albert O. Halse. *Associate Professor of Architecture (on leave, spring term)*

B.Arch., New York University, 1940; M.A., 1944; Ed.D., 1952. Member, American Institute of Architects; American Institute of Interior Designers. Registered architect.

Cyril M. Harris. *Professor of Architecture and Electrical Engineering*

B.A., California (Los Angeles), 1938; M.A., 1940; Ph.D., Massachusetts Institute of Technology, 1945. Fellow, Acoustical Society of America; Institute of Electrical and Electronic engineers. Director, the Acoustics Laboratory.

Edgar Kaufmann, Jr. *Adjunct Professor of Art History and Architecture*

D.F.A., Allegheny, 1963. Apprenticed with Frank Lloyd Wright, 1934–1935. Director, Department of Industrial Design, Museum of Modern Art. Honorary member, American Institute of Architects.

Alexander Kouzmanoff. *Professor of Architecture (on leave, academic year)*

B.S., Illinois, 1939; M.S., 1949. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate.

Jan Hird Pokorny. *Associate Professor of Architecture*

Engineer-Architect, Polytechnical University (Prague), 1938; M.S., Columbia, 1941. Fellow, American Institute of Architects. Member, National Institute of Architectural Education; Architectural League of New York. Registered architect. N.C.A.R.B. certificate.

Chester Rapkin. *Professor of Urban Planning*

B.S., College of the City of New York, 1939; Ph.D., Columbia, 1953. Commissioner, New York City Planning Commission.

Charles J. Rieger. *Associate Professor of Architecture*

Architecte Diplômé par le Gouvernement Français, Paris, 1937. Fellow, Société des Architectes Diplômés par le Gouvernement Français; National Institute for Architectural Education; member and consultant on architectural education to Union Internationale des Architectes.

Theodor K. Rohdenburg. *Associate Professor of Architecture*

B.Arch., Columbia, 1937. Member, American Institute of Architects; Association of Collegiate Schools of Architecture. Registered architect.

Mario J. Salvadori. *Professor of Civil Engineering and Architecture*

D.C.E., Rome, 1930; D.Math., 1933; Libero Docente in Theory of Structures, 1937. Fellow, American Society of Civil Engineers; American Society of Mechanical Engineers; New York Academy of Sciences. Member, American Concrete Institute; International Association of Shell Structures; International Association of Bridge and Structural Engineering. Registered professional engineer.

Granville H. Sewell. *Associate Professor of Urban Planning*

B.S., Massachusetts Institute of Technology, 1959; Ph.D., 1966.

Kenneth Alexander Smith. *Professor of Architecture*

B.S., Massachusetts Institute of Technology, 1927. Member, National Institute for Architectural Education; Association of Collegiate Schools of Architecture; Society of Architectural Historians; American Institute of Architects. Registered professional engineer.

Charles W. Thurston. *Associate Professor of Architecture*

B.S., Union (Schenectady), 1943; M.S., Columbia, 1950; Ph.D., 1958. Member, American Society of Civil Engineers; American Concrete Institute; American Society for Engineering Education; American Society for Testing and Materials; Society for Experimental Stress Analysis; Sigma Xi. Registered professional engineer.

Danforth W. Toan. *Adjunct Professor of Architecture*

B.A., Dartmouth, 1940; B.Arch., Columbia, 1949. Member, American Institute of Architects. Registered architect, N.C.A.R.B. certificate.

## ► OTHER OFFICERS OF INSTRUCTION

Robert Kolodny. *Instructor in Urban Planning*

B.A., Antioch, 1962; M.C.P., Pennsylvania, 1967. Sears Roebuck Fellow, 1965–1967. Member, American Institute of Planners; American Society of Planning Officials.

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Victor G. Alicea. *Lecturer in Urban Planning*

B.S., Columbia, 1963; M.S.W., 1966.

Robert K. Bedell. *Lecturer in Architecture*

B.S. Eng., Stanford, 1947. Registered engineer.

Harold K. Bell. *Adjunct Associate Professor of Architectural Technology*

B.B.A., College of the City of New York, 1947. President, Building Industry League. Housing consultant, Construction for Progress, Inc.

Horst Berger. *Lecturer in Architecture*

Dipl.-Ing., Technische Hochschule Stuttgart (Germany), 1954. Member, American Concrete Institute. Registered engineer.

Max Bond. *Lecturer in Architecture*

B.A., Harvard, 1955; M.Arch., 1958. Fulbright Scholar, France, 1958–1959. Registered architect.

Robert Burns. *Adjunct Professor of Architecture*

B.S.M.E., Rutgers, 1937; M.S., 1941. Registered engineer; registered architect. N.C.A.R.B. certificate.

Arthur E. Bye, Jr. *Lecturer in Architecture*

B.S., Pennsylvania State, 1942. Member, American Society of Landscape Architects; Architectural League of New York.

Eric Carlson. *Adjunct Associate Professor of Urban Planning*

B.A., Columbia, 1943; M.P.A., Institute of Public Administration (New York City), 1947. Founding member and trustee, Foundation for Cooperative Housing, 1951. Cofounder, Government Public Relations Association, 1945; New York Metropolitan Committee for Planning, 1947. Founding member, Inter-American Planning Society, 1956. Honorary member, Colombian Society of Architects, 1958. Director, National Housing Conference, International Self-Help Housing Associates. Member, National Association of Housing and Redevelopment Officials; American Society of Planning Officials; Venezuelan Planning Society. Former director, Inter-America Housing and Planning Center. Chief, Housing Section, United Nations.

C. L. Crouch. *Lecturer in Architecture*

B.S., Michigan. Fellow, Illuminating Engineering Society; American Association for the Advancement of Science. Member, Optical Society of America and National Council on Schoolhouse Construction. Registered engineer.

Giuseppe de Campoli. *Preceptor in Architecture*

Doctor of Civil Eng. Naples, 1960. Registered engineer.

Fred S. Dubin. *Adjunct Professor of Architecture*

B.S.M.E., Carnegie Institute of Technology, 1935. Member, Connecticut Chapter, American Right of Way Association; National Society of Professional Engineers; American Society of Heating and Ventilating Engineers; American Society of Refrigerating Engineers; Connecticut Society of Professional Engineers. Registered engineer.

M. Paul Friedberg. *Lecturer in Architecture*

B.S., Cornell, 1954; Art Students League. Member, American Society of Landscape Architects, National Action Council, Urban America; Advisory Board for U.S. National Committee for Early Childhood Education. Board of Directors, Municipal Arts Society; Park Association; Association of Parks and Playgrounds. Vice President, Architectural League.

Ervin Yvan Galantay. *Adjunct Associate Professor of Architecture*

Diploma (architecture), Swiss Federal Institute of Technology (Zürich), 1955; Master of City Design, Miami (Ohio), 1958. Swiss Traveling Fellow, 1955–1956. Member, Institute of Swiss Architects and Engineers. Registered architect.

John M. Garber. *Lecturer in Architecture*

B.A., Yale, 1946; B.Arch., Harvard, 1952. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate.

David Evan Glasser. *Adjunct Assistant Professor of Architecture*

B.Arch., Columbia, 1961. William Kinne Fellows Traveling Fellow, 1961. Registered architect.

Charles Gwathmey. *Lecturer in Architecture*

B.Arch., Yale, 1962. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate.

Leonard Heumann. *Lecturer in Urban Planning*

B.Arch., California (Berkeley), 1966; M.C.P., 1967.

Barry Jackson. *Lecturer in Architecture*

B.Arch., Rensselaer Polytechnic Institute, 1958; M.Arch., California (Berkeley), 1965. Member, American Institute of Architecture. Registered architect.

Samuel Joroff. *Adjunct Associate Professor of Urban Planning*

B.S., Massachusetts Institute of Technology, 1934; M.C.P., 1946. Regional Planning Consultant of United Nations to Turkey, 1961–1962. Member, American Institute of Planners; American Society of Planning Officials. Deputy Director, Office of Staten Island Development, Office of the Mayor, New York. Licensed professional planner.

Ada Karmi-Melamede. *Lecturer in Architecture*

B.A. in Arch., Technion-Israel Institute of Technology, 1961.

R. M. Kliment. *Adjunct Assistant Professor of Architecture*

B.A., Yale, 1954; B.Arch., 1959. Fulbright Scholar, 1959. Registered architect.

Frank S. Kristof. *Adjunct Associate Professor of Urban Planning*

B.B.A., College of the City of New York, 1942; M.S., Columbia, 1947; Ph.D., 1952.

Matthys P. Levy. *Adjunct Assistant Professor of Architecture*

B.C.E., College of the City of New York, 1951; M.S., Columbia, 1956; C.E., 1962. Registered engineer.

George S. Lewis. *Adjunct Associate Professor of Architecture*

B.A., Harvard, 1938; B.Arch., 1942. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate.

Henry Liu. *Adjunct Associate Professor of Architecture*

B.Arch., Ohio State, 1956; M.Arch., Harvard, 1960. Member, Harvard Graduate School of Design, Association Council, 1968-1970. Registered architect.

John M. McCormick. *Adjunct Associate Professor of Architecture*

B.S., Villanova, 1956; M.S., Columbia, 1957; Eng.Sc.D., 1961.

William Garrison McNeil. *Lecturer in Architecture*

B.S., College of the City of New York, 1965; B.Arch., 1966; M.S., Columbia, 1969. William Kinne Fellows Traveling Fellow, 1969.

Albert Mayer. *Adjunct Professor of Urban Planning*

B.A., Columbia, 1917; B.C.E., Massachusetts Institute of Technology, 1919. Director, National Housing Conference. Fellow, American Institute of Architects; American Society for Applied Anthropology. Member, American Society of Civil Engineers; American Institute of Planners.

Harold L. Mindell. *Adjunct Associate Professor of Architecture*

B.S.M.E., Michigan, 1950. Member, National Society of Professional Engineers; Illuminating Engineers; Society; University of Hartford Associates; Consulting Engineers Association of Connecticut. Registered engineer.

Oscar Newman. *Adjunct Associate Professor of Architecture*

B.Arch., McGill, 1959. Member, Province of Quebec Association of Architects; Nova Scotia Association of Architects; Royal Architectural Institute of Canada; Corporation of Urbanists of Quebec. Registered architect. Registered planner.

Charles E. Peterson. *Adjunct Professor of Architecture*

B.A., Minnesota, 1928. Fellow, American Institute of Architects. President, Association for Preservation Technology (Canadian-American). Past president, Society of Architectural Historians. Corresponding member, Committee on Historic Buildings, American Institute of Architects; member, U.S. ICOMOS Committee. Registered architect.

Adolf K. Placzek. *Adjunct Associate Professor of Architecture*

University of Vienna, 1931–1938; B.S., Columbia, 1942.

Stephen R. Rosenthal. *Lecturer in Urban Planning*

B.S., Brown, 1962; M.S., Massachusetts Institute of Technology, 1964.

C. Peter Rydell. *Adjunct Assistant Professor of Urban Planning*

B.A., Harvard, 1962; M.C.P., Pennsylvania, 1964; M.A., 1964; Ph.D., 1966. Research Urban Planner, N.Y.C.-Rand Institute. Member, Regional Science Association.

Alfred Schimmel. *Adjunct Associate Professor of Urban Planning*

B.S., College of the City of New York, 1935; M.S., 1936. Senior member, American Society of Appraisers. Fellow, Institute of Assessing Officers.

S. J. Schulman. *Adjunct Professor of Urban Planning*

B.C.E., Cooper Union, 1949; M.S., Columbia, 1954. William Kinne Fellows Traveling Fellow, 1954. Member, American Institute of Planners. Registered engineer.

Jay Marc Schwamm. *Adjunct Associate Professor of Architecture*

B.A., Princeton, 1951; M.B.A., Harvard, 1953.

Renato Severino. *Adjunct Professor of Architecture*

D.Arch., Florence (Italy), 1954. Fulbright grant, 1956.

Thomas J. Thomas. *Preceptor in Urban Planning*

B.Arch., Rensselaer Polytechnic Institute, 1959; M.S., Columbia, 1963. William Kinne Fellows Traveling Fellow, 1963.

Julius B. Twyne, Jr. *Lecturer in Architecture*

B.S., Hampton Institute, 1962; B.Arch., Cornell, 1960. Registered architect.

Richard J. Watson. *Lecturer in Urban Planning*

B.S., Temple, 1952; M.S., 1954. Official, National Association of Housing and Redevelopment. Member, Delaware Valley Chapter, National Association of Housing and Redevelopment; National Housing Conference.

Frank E. Williams. *Lecturer in Architecture*

B.Arch., California (Berkeley), 1961; M.Arch. in Urban Design, Harvard, 1965.

Charles P. Winter. *Adjunct Associate Professor of Architecture*

B.Arch., Columbia, 1955. William Kinne Fellows Traveling Fellow, 1955–1956. Registered architect.

George Yourke. *Lecturer in Architecture*

B.A., Columbia, 1954; B.Arch., 1957. William Kinne Fellows Traveling Fellow, 1957. Member, Regional Plan Association.

### TEACHING ASSISTANTS

James Doman, B.S.

Jean-Paul Joly, M.S. Eng.

Alfred H. Liu, B.A., M.A.

Justin O'Connor, B.A.

Clarence Pete, B.S., B.Arch.

Theodorus N.M. Prudon, M.Arch.

Hung-Kai Wang, B.S. Arch. Eng., M.Arch

### RESEARCH OFFICERS

Hyung C. Chung. *Staff Associate*
B.Arch., Yale, 1960; M.C.P., 1962.

Margaret W. Latimer. *Staff Associate*
B.A., Sarah Lawrence, 1962; M.R.P., North Carolina, 1964.

Grace Milgram. *Senior Research Associate; Assistant Director for Research*
B.A., Antioch, 1937; M.C.P., Pennsylvania, 1960; Ph.D., 1967.

Stephen Mittenthal. *Staff Associate*
B.A., Yale, 1959; M.A., Columbia, 1960; M.P.A., Princeton, 1963.

Robert W. Ponte. *Research Analyst*
B.A., Pennsylvania, 1964; M.C.P., 1966.

Mohammad A. Qadeer. *Staff Associate*
B.S., Punjab (Pakistan), 1953; Dipl. in International Affairs, 1956; M.A., 1959; M.S., Graduate School of Ekistics (Greece), 1963; M.C.P., Rhode Island, 1966.

Hans B. C. Spiegel. *Senior Research Associate*
B.A., Antioch, 1948; M.A., Columbia, 1949; Ed.D., 1954.

Raymond Peter Whalley. *Graduate Research Assistant*
B.A., Oxford, 1969.

## ► OFFICERS OF INSTRUCTION FROM OTHER DIVISIONS OF THE UNIVERSITY

W. Bruce Bassett. *Assistant Professor of Business*
B.A., Northwestern, 1961; L.L.B., Columbia, 1964; M.A., 1966.

Charles W. Bastable, Jr. *Professor of Business*
B.S., Columbia, 1938; M.S., 1939; Ph.D., 1952; C.P.A.

Gerald P. Brady. *Professor of Business and Law*
B.A., Columbia, 1951; LL.B., 1957; M.S., 1958.

John C. Burton. *Associate Professor of Business*
B.A., Haverford, 1954; M.B.A., Columbia, 1956; Ph.D., 1962; C.P.A.

Demetrios Caraley. *Professor of Government* (*Barnard* and *Graduate Faculties*)
B.A., Columbia, 1954; Ph.D., 1962.

Franklin R. Edwards. *Associate Professor of Business*
B.A., Bucknell, 1958; M.A., 1960, Ph.D., Harvard, 1964; J.D., New York University, 1968.

John W. Fertig. *Professor of Biostatistics* (*School of Public Health and Administrative Medicine*)
B.A., Ursinus, 1931; Ph.D., Minnesota, 1935.

Jewell M. Garrelts. *Renwick Professor of Civil Engineering*
B.S., Valparaiso, 1925; M.S., Columbia, 1933.

Dale L. Hiestand. *Associate Professor of Business Economics* (*Business*)
B.S.B.A., Washington (St. Louis), 1948; M.A., 1949; Ph.D., Columbia, 1963.

Frederick B. Putney. *Assistant Professor of Business*
B.A., Washington, 1961; Ph.D., Stanford, 1968.

Giulio Pontecorvo. *Professor of Business Economics* (*Business*)
B.A., Dartmouth, 1946; M.C.S., 1947; Ph.D., California, 1956.

George Rand. *Associate Professor of Psychology and Education* (*Teachers College*)
B.S., College of the City of New York, 1959; M.A., Clark, 1961; Ph.D., 1965.

Henry B. Reiling. *Associate Professor of Business*
B.A., Northwestern, 1960; M.B.A., Harvard, 1962; LL.B., Columbia, 1965.

Eugene Santomasso. *Instructor in Art History*
B.A., Yale, 1961; M.A., Columbia, 1964. Member, Society of Architectural Historians.

Robert D. Stoll. *Associate Professor of Civil Engineering*
B.S., Illinois, 1953; M.S., 1956; Eng.Sc.D., Columbia, 1962.

Russell A. Taussig. *Professor of Business*
B.S., California, 1941; M.B.A., 1947; Ph.D., 1962; C.P.A.

Everard M. Upjohn. *Professor of Art History* (*Columbia College*)
B.A., Harvard, 1925; M. Arch., 1929.

Maurice Wilkinson. *Associate Professor of Business*
B.A., California (Los Angeles), 1961; M.A., Harvard, 1963; Ph.D., 1964.

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Carl Christian Dauterman. *Adjunct Professor of Art History*
B.A., New York University, 1949; M.A., Columbia, 1960.

Eugene D. Rosenfeld. *Adjunct Associate Professor of Administrative Medicine*
B.A., Colorado, 1939; M.D., 1943.

Don J. Summa. *Adjunct Professor of Business*
B.A., Columbia, 1947; M.S., 1948; C.P.A.

## ► ADMINISTRATIVE OFFICERS

John Alexander Robinson, B.A., B.Arch. *Assistant Dean*

Curtis Jay Berger, B.A., LL.B. *Chairman of the Division of Urban Planning*

Romaldo Giurgola. *Chairman of the Division of Architecture*

Mario Salvadori. *Chairman of the Division of Architectural Technology*

Chester Rapkin. *Director of the Institute of Urban Environment*

Grace Milgram. *Assistant Director for Research of the Institute of Urban Environment*

Harold K. Bell. *Director of the Urban Action and Experimentation Program*

Vernon Leo Robinson, B.A., M.S.W. *Associate Director of the Urban Action and Experimentation Program*

Jan Hird Pokorny. *Director of the Evening Program*

Adolf K. Placzek, B. S. *Avery Librarian*

Loes Schiller, Dipl. S.W. *Admissions Officer*

Bruce C. L. Pratt, B.A. *Assistant to the Registrar*

Hiram Jackson. *Assistant to the Dean for Minority Students*

Jane H. Bobbe. *Administrative Assistant*

## ► PROFESSORS EMERITI (NOT IN RESIDENCE)

Leopold Arnaud. *Ware Professor Emeritus of Architecture; Dean Emeritus of the Faculty of Architecture*

Ernest M. Fisher. *Professor Emeritus of Urban Land Economics*

James Grote Van Derpool. *Professor Emeritus of Architecture*

# Architecture

Architecture as a process is bound to man's fundamental beliefs and needs, interpreting in its forms, social and technological changes. As a discipline, it embodies in its manifestations the advancement of knowledge. The purpose of architectural education is to clarify for the student the interactions of seemingly unrelated elements and events rooted in divergent areas of man's experience and to realize from this a structure of relationships and a form.

The student may earn the professional degrees of Bachelor of Architecture, Master of Science in architecture, and Master of Science in urban design in the architecture division. A statement concerning Ph.D. degree candidates specializing in architecture is on page 22. The program requirements for these degrees are described on pages 14–22.

Students should consult the sections on admission and degree requirements on pages 54–62.

Although the School offers some courses during the Summer Session, it is strongly recommended that students follow the curricula outlined in the following pages and accept employment during the summer in architectural offices or in the construction field to further their practical knowledge.

## Bachelor of Architecture Degree

The course of study for the B.Arch. degree provides for a varied involvement in the investigation of the elements of architecture including technology, history, and planning. At the core of the curriculum is the platform system of design studio, which is founded on the belief that a student's education is most valuable when it is motivated by the relevance and significance of the issues he is exploring. A platform is a broad area of interest proposed by one or a group of students and/or faculty members who feel that the questions arising from the area of interest are architecturally significant and important enough to explore. Since these issues may come from many sources, the student is encouraged to produce them and, with the help of his advisers, to set a course of study where his own interests are developed toward the understanding of the significant. A student's education in design consists of participation in a series of platforms, the order of which would correspond to his particular interests, development, and abilities.

The degree may be earned either through full-time attendance during the day or through part-time attendance in the evening and on Saturday. The day program usually requires four years of attendance; the evening program, at least six years, with full-time attendance in the day program required during the last year. Evening students are usually required to finish their degree work within eight years after they become degree candidates. The courses in the programs vary, but the standards are the same for both programs.

# *Day Program*

A total of 126 points is required for the degree.

## ► FIRST YEAR

| AUTUMN TERM | | POINTS |
|---|---|---|
| ~~Architecture A3101~~ | ~~Architecture I~~ | ~~6~~ |
| Architecture A3001 | Project seminar I | 1 |
| Architecture A3181 | Communication and Drawing I | 2 |
| *Architecture A3009 | Applied mathematics | 2 |
| Architecture A3010 | Structural survey | 2 |
| Architecture A3121 | Architectural construction I | 3 |
| 3182 | | — |
| | | 16 |

| SPRING TERM | | |
|---|---|---|
| Architecture A3102 | Architecture II | 6 |
| Architecture A3002 | Project seminar II | 2 |
| Architecture A3182 | Communication and drawing II | 2 |
| Architecture A3011 | Statically determinate structures | 3 |
| Architecture A3140 | Environmental sciences survey | 2 |
| | | — |
| | | 15 |

## ► SECOND YEAR

| AUTUMN TERM | | |
|---|---|---|
| Architecture A3103 | Architecture III | 6 |
| Architecture A3012 | Strength of materials | 3 |
| Architecture A4141 | Building services I | 3 |
| Architecture A4151 | Evolution of cities | 3 |
| Architecture A3122 | Architectural construction II | 3 |
| | | — |
| | | 18 |

| SPRING TERM | | |
|---|---|---|
| Architecture A3104 | Architecture IV | 5 |
| Architecture A3018 | Statically indeterminate structures | 2 |
| Architecture A4142 | Building services II | 3 |
| Architecture A4152 | History of architecture I | 3 |
| Planning A3161 | Principles of urban design theory | 3 |
| | | — |
| | | 16 |

* Qualified students may be exempted from this requirement by passing an examination during registration. An approved elective should be substituted.

## ► THIRD YEAR

| | | POINTS |
|---|---|---|
| **AUTUMN TERM** | | |
| Architecture A3105 | Architecture: platform I | 7 |
| Architecture A3130 | Wood, steel, and reinforced concrete I | 3 |
| Architecture A4153 | History of architecture II | 3 |
| Planning A3182 | Economics of urban land and improvements | 2 |
| | Elective | 2 |
| | | 17 |
| **SPRING TERM** | | |
| Architecture A3106 | Architecture: platform II | 7 |
| Architecture A3131 | Wood, steel, and reinforced concrete II | 3 |
| Architecture A3132 | Professional practice and project documents | 2 |
| | Elective | 3 |
| | | 15 |

## ► FOURTH YEAR

| | | |
|---|---|---|
| **AUTUMN TERM** | | |
| Architecture A3107 | Architecture: platform III | 8 |
| Architecture A4134 | Experimental structures | 2 |
| Architecture A3155 | History of architecture: modern | 2 |
| | Electives | 4 |
| | | 16 |
| **SPRING TERM** | | |
| Architecture A3108 | Architecture: platform IV | 10 |
| | *Architectural history seminar | 2 |
| | Elective | 2 |
| | | 14 |

* To be selected from approved course offerings at registration; may be taken in either the autumn or spring term.

# *Evening Program*

Students who entered the evening program before 1968 should consult the director of the evening program concerning their requirements.

## ► FIRST YEAR

| AUTUMN TERM | | POINTS |
|---|---|---|
| Architecture A3201 | Architecture IA | 4 |
| Architecture A3121 | Architectural construction I | 3 |
| Architecture A3181 | Communication and drawing I | 2 |
| | | 9 |

| SPRING TERM | | |
|---|---|---|
| Architecture A3202 | Architecture 1B | 3 |
| Architecture A3122 | Architectural construction II | 3 |
| Architecture A3182 | Communication and drawing II | 2 |
| | Elective | 2 |
| | | 10 |

| SUMMER SESSION | | |
|---|---|---|
| Architecture S3009J | Applied mathematics | 2 |

## ► SECOND YEAR

| AUTUMN TERM | | |
|---|---|---|
| Architecture A3203 | Architecture IIA | 4 |
| Architecture A3010 | Structural survey | 2 |
| Architecture A3011 | Statically determinate structures | 3 |
| | | 9 |

| SPRING TERM | | |
|---|---|---|
| Architecture A3202 | Architecture IB | 3 |
| Architecture A3122 | Architectural construction II | 3 |
| Architecture A3182 | Communication and drawing II | 2 |
| | Elective | 2 |
| | | 10 |

## ► THIRD YEAR

| AUTUMN TERM | | POINTS |
|---|---|---|
| Architecture A3205 | Architecture IIIA | 4 |
| Architecture A3018 | Statically indeterminate structures | 2 |
| | Elective | 3 |
| | | 9 |

| SPRING TERM | | |
|---|---|---|
| Architecture A3206 | Architecture IIIB | 3 |
| Architecture A3124 | Methods of technology | 3 |
| Architecture A3140 | Environmental sciences survey | 2 |
| Architecture A3130 | Wood, steel, and reinforced concrete I | 3 |
| | | 11 |

## ► FOURTH YEAR

| AUTUMN TERM | | |
|---|---|---|
| Architecture A3207 | Architecture: platform IA | 3 |
| Architecture A3131 | Wood, steel, and reinforced concrete II | 3 |
| Architecture A4142 | Building services II | 3 |
| Architecture A4152 | History of architecture I | 3 |
| | | 12 |

| SPRING TERM | | |
|---|---|---|
| Architecture A3208 | Architecture: platform IB | 4 |
| Architecture A3125 | Architectural detailing | 2 |
| Architecture A4141 | Building services I | 3 |
| | Electives | 2 |
| | | 11 |

## ► FIFTH YEAR

| AUTUMN TERM | | POINTS |
|---|---|---|
| Architecture A3209 | Architecture: platform IIA | 4 |
| Architecture A4151 | Evolution of cities | 2 |
| Planning A3182 | Economics of urban land and improvements | 2 |
| | Electives | 2 |
| | | 10 |

| SPRING TERM | | |
|---|---|---|
| Architecture A3210 | Architecture: platform IIB | 3 |
| Architecture A4153 | History of architecture II | 3 |
| | Electives | 4 |
| | | 10 |

## ► SIXTH YEAR: FULL-TIME STUDY

*See* fourth year, day program, page 15.

# Master of Science Degree Programs

A candidate for the second professional degree may take a course of study for the M.S. degree in urban design or for the M.S. degree in architecture with a specialization in one of the following: architectural research and design; hospital and public health planning and design; preservation and restoration of historic buildings. The student is expected to have achieved an outstanding record in his first professional degree. Since the programs require the study of technical aspects of the particular field beyond the level of the first professional degree, it is assumed that the student is not pursuing graduate study merely to refresh the professional skills he has already acquired. In addition, individual programs may be arranged for those students interested in environmental design, architectural history, and education facilities planning and design. Every candidate for an M.S. degree must undertake design work in the studios, but the design work is organized for each specialty.

The status of the candidate is provisional during his first term of residence, and he is expected to maintain a B average. If he is permitted to continue, he may be required to take more than the minimum points required in design in order to earn his degree. A minimum of 30 points of course work at Columbia is required for the M.S. degree, regardless of the amount of advanced standing the student may have been awarded. The program and course requirements in each field are outlined on the following pages. All electives must be graduate courses and approved by the student's adviser.

## *Master of Science Degree in Urban Design*

A two-year program in urban design has been instituted for those concerned with the theory and practice of building cities and their supporting regions. The objective of the program is to explore new information, application, and methodology for a sound approach to the relationships produced by human settlement at the city and regional scale. Project seminars and linked design platforms are at the core of the program; project seminars survey different fields and set the base of ideas and techniques in preparation for the design approach. The design platforms introduced by students and faculty members cover relevant issues which are then projected into programs and eventual physical solution. In order to achieve a comprehensive base, a number of planning courses complementing the design platforms and seminars are part of the curriculum.

In the first year, emphasis is on analysis, definition of problems, study of structural models, methodologies for program development, and project planning.

In the second year, through the design platform or other research projects, a greater involvement in the study and design of the urban space is intended. The program will be completed with internship and work with civic agencies, community groups, and research institutes which will extend throughout the summer.

A total of 66 points is required for the degree.

### ► FIRST YEAR

| AUTUMN TERM | | POINTS |
|---|---|---|
| Architecture A6159 | Architecture: urban design introduction | 6 |
| Architecture A6001 | Project seminar I | 2 |
| Architecture A6059 | The dynamics of urban open space | 3 |
| Architecture A6163 | Theory and practice of urban design I | 3 |
| Planning A6132 | Transportation and land use planning | 3 |
| | | 17 |

**SPRING TERM**

| | | POINTS |
|---|---|---|
| Architecture A6160 | Architecture: urban design platform I | 6 |
| Architecture A6002 | Project seminar II | 2 |
| Architecture A6164 | Theory and practice of urban design II | 3 |
| | Electives | 6 |
| | | 17 |

## ► SECOND YEAR

**AUTUMN TERM**

| | | |
|---|---|---|
| Architecture A6165 | Architecture: urban design platform II | 8 |
| Architecture A6003 | Project seminar III | 2 |
| | Electives | 6 |
| | | 16 |

**SPRING TERM**

| | | |
|---|---|---|
| Architecture A6166 | Architecture: urban design platform III | 10 |
| | Electives | 6 |
| | | 16 |

# *Master of Science Degree in Architecture*

## ► ARCHITECTURAL RESEARCH AND DESIGN

The program in architectural research and design provides an opportunity for the student to thoroughly investigate complex problems, which he programs and criticizes and on which he is criticized, in such a way as to develop further his own personal philosophy of architectural design and aesthetics.

A total of 34 points is required for the degree.

**AUTUMN TERM**

| | | |
|---|---|---|
| Architecture A6129 | Architecture: research and design | 5 |
| *Architecture A6134 | Advanced structures | 3 |
| *Planning A6161 | Urban design theory | 3 |
| | Electives | 6 |
| | | 17 |

* Suggested course. Another course may be substituted with the approval of the adviser and the division chairman.

| SPRING TERM | | POINTS |
|---|---|---|
| Architecture A6130 | Architecture: research and design | 8 |
| *Law-Planning W6141 | Housing and city rebuilding | 3 |
| *Planning A4182 | Economics of urban development | 3 |
| | Electives | 3 |
| | | 17 |

## ► HOSPITAL AND PUBLIC HEALTH PLANNING AND DESIGN

This joint program with the School of Public Health and Administrative Medicine is organized to provide graduate students interested in the field of health planning and architecture with a background in the operation of medical facilities through courses at the medical center, field trips to existing medical and public health facilities, and contact with hospital administrators. The emphasis of the program is on course work and on individual research as they relate to planning and design problems in the field, rather than on the complete architectural design of a hospital or of medical structures.

Students who register for courses at the School of Public Health and Administrative Medicine must register both in that School and in the School of Architecture. Information on this registration procedure is on page 63.

A total of 34 points is required for the degree.

| AUTUMN TERM | | |
|---|---|---|
| Architecture A6139 | Architecture: health facilities | 6 |
| Architecture A6021 | Advanced research I | 2 |
| *Architecture A6135 | Variables and form in architecture | 3 |
| Public Health P6206 | Social foundations of community health | R |
| Biostatistics P6201 | Introduction to vital statistics | 2 |
| TJ3107 (Teachers College) | Hospital administration | 2 |
| | Electives | 3 |
| | | 18 |

| SPRING TERM | | |
|---|---|---|
| Architecture A6140 | Architecture: health facilities | 7 |
| *Architecture A6136 | Variables and form in architecture | 3 |
| Administrative Medicine P6203 | Principles of medical care administration | 1 |
| Administrative Medicine P6204 | Current topics in medical care | 1 |
| Administrative Medicine P6205 | Medical care field trips | 1 |
| | Electives | 3 |
| | | 16 |

* Suggested course. Another course may be substituted with the approval of the adviser and the division chairman.

## ► RESTORATION AND PRESERVATION OF HISTORIC BUILDINGS

The aim of the program in Restoration and Preservation of Historic Buildings is to train professional preservationists to deal with the problems of preserving the national artistic and historic patrimony. The program provides the opportunity for the student to gain an understanding of the philosophical and theoretical problems in the field, the techniques of surveying actual buildings, and the knowledge of materials and construction techniques.

For information about a joint program with the Department of Art History and Archaeology, contact that department at 809 Schermerhorn, Columbia University.

A total of 34 points is required for the degree.

| AUTUMN TERM | | POINTS |
|---|---|---|
| Architecture A6149 | Architecture: restoration and preservation | 5 |
| Architecture A6153 | Restoration and preservation: seminar | 3 |
| Architecture A6155 | Descriptive analysis of historic buildings | 2 |
| Architecture A8049 | Research problems in the history of architecture | 3 |
| | Elective | 3 |
| | | 16 |

| SPRING TERM | | |
|---|---|---|
| Architecture A6150 | Architecture: restoration and preservation | 5 |
| Architecture A6154 | Restoration and preservation: seminar | 3 |
| Architecture A6156 | Descriptive analysis of historic buildings | 2 |
| Architecture A6157 | Technology of early American building | 2 |
| Architecture A6158 | The architecture of North America: 1600–1914 | 3 |
| | Elective | 3 |
| | | 18 |

# Doctor of Philosophy Degree

In this division, a candidate for the Ph.D. degree may choose his specialty from several fields, including history, environmental design, restoration, hospital facilities, and the structural or technical fields which would not be included in the division of architectural technology. The Ph.D. degree candidate may not specialize in design, and no studio courses will be credited toward the degree. For further information regarding the degree program and admission procedure, see pages 58 and 62.

# Architectural Technology

The division of architectural technology was established to train architects and engineers in those specialties which are important in the achievement of good architecture through technology.

By their training in the latest building and environmental techniques, graduate architects increase their ability to communicate with their engineering consultants; by expanding their knowledge of structures and by acquiring a better understanding of the problems involved in the construction of buildings, graduate engineers become better consultants to the architects.

Through a general curriculum which emphasizes building techniques and technical aspects of architecture such as lighting and acoustics, heating and ventilating, vertical and horizontal circulation, economics and law, graduate students are given the opportunity for a better understanding of the problems involved in architectural technology and their practical solution. Students may follow this suggested general curriculum, or they may arrange individual programs according to their particular specialties.

Students spend a full academic year on the campus, taking courses in both the theory and the practice of technology. In addition, a six-month period spent in the field, the office, or the laboratory, as well as in the writing of a thesis, is required to obtain the degree of Master of Science in architectural technology.

## Master of Science Degree in Architectural Technology

A total of 34½ points is required for the degree.

### ► FOR STUDENTS WHOSE UNDERGRADUATE WORK WAS IN CIVIL ENGINEERING

| AUTUMN TERM | | POINTS |
|---|---|---|
| Architecture A4128 | Acoustics | 2 |
| Architecture A4141 | Building services I | 3 |
| Business B6005 | Business in a changing economy | 3 |
| Business Law B6901 | Legal aspects of business I | 3 |
| Civil Engineering E4011 | Digital computer applications | 2 |
| Civil Engineering E4221 | Advanced structural analysis | 3 |
| Civil Engineering E4241 | Soil mechanics and foundations | 3 |
| | | 19 |

**SPRING TERM**

| | | POINTS |
|---|---|---|
| Architecture A3139 | Principles of illumination design | 2 |
| Architecture A4142 | Building services II | 3 |
| Business B6013 | Quantitative methods I: accounting | 4 |
| Architectural Technology A6801 | Professional experience | ½ |
| Architectural Technology A6802 | Thesis | 3 |
| | Elective | 3 |
| | | 15½ |

► FOR STUDENTS WHOSE UNDERGRADUATE WORK WAS IN ARCHITECTURE

**AUTUMN TERM**

| | | |
|---|---|---|
| *Architecture A3009 | Applied mathematics | 0 |
| Architecture A4128 | Acoustics | 2 |
| Architecture A6134 | Advanced structures | 3 |
| Business B6013 | Quantitative methods I: accounting | 4 |
| Civil Engineering E4241 | Soil mechanics and foundations | 3 |
| Engineering Math E4811 | Digital computers: engineering applications | 3 |
| | Elective | 3 |
| | | 18 |

**SPRING TERM**

| | | |
|---|---|---|
| Architecture A3139 | Principles of illumination design | 2 |
| Business B6005 | Business in a changing economy | 3 |
| Business Law B6901 | Legal aspects of business I | 3 |
| Planning A6131 | Planning engineering | 3 |
| Architectural Technology A6801 | Professional experience | ½ |
| Architectural Technology A6802 | Thesis | 3 |
| | Elective | 2 |
| | | 16½ |

* Qualified students may be exempted from this requirement by passing an examination during registration. No point credit toward the M.S. degree is allowed for this course.

# Doctor of Philosophy Degree

In this division a candidate for the Ph.D. degree may specialize in any one of the scientific or technical fields that have particular relation to architecture, such as structural design, environmental design, or construction techniques, under a subcommittee of the Graduate Faculties. Any of these subjects may be expanded into a financial study of the proposal. Research for the dissertation is expected to be original and to contribute significantly to the literature in the field. For admission and degree requirements, see pages 58 and 62.

# Urban Planning

The program of work in the division of urban planning is designed to familiarize the prospective city planner with the broader problems of human environment and to educate him in those aspects of the planning process which he may ultimately choose as his specialty. Planning theory and method, housing and real estate in its multiple aspects, city building and rebuilding, regionalization, transportation, social and recreational facilities, slums and poverty, and the interrelationships between the various levels of government are studied in seminars and in theory and design courses. Theory and practical application are integrated in studios and workshops.

As part of a university in a large metropolis, the division of urban planning enjoys particular advantages. There are many new programs, technologies, and experiments in progress, so that New York City is, indeed, uniquely equipped to show students at first hand both the problems and the potentials of urbanization. The presence of the United Nations headquarters facilitates consideration of urban affairs in other nations, the developing as well as the industrialized. Some of the foremost housing and planning experts in the world are also here, and they are often called upon to give special lectures and courses, to criticize projects, and to advise students. The student may also avail himself of the assistance of official government planning agencies in preparing his work.

Constructive relationships have been established with other departments and divisions of the University. The facilities of those whose work touches upon the planning process—anthropology, economics, sociology, social work, architecture, political science, and others—are available informally and formally through course work. In some instances, joint programs with other schools leading to the M.S. degree in urban planning and another degree can be arranged.

Because the Institute of Urban Environment (page 29) is particularly related to the division of urban planning, a number of advanced students may be invited to participate in the research program of the Institute. Under a traveling fellowship program available to the School of Architecture, a limited number of planning students are eligible annually for study programs abroad during summer vacations. In order to expand their skills, students who are not on traveling fellowships are encouraged to accept employment in planning offices during their summer vacations or to take supplemental courses offered by the division of urban planning as described in the bulletin of the Summer Session.

# Master of Science Degree in Urban Planning

The M.S. degree in urban planning requires two years of full-time study; no part-time students are accepted. Ordinarily, students enter in the autumn term, but a few are accepted in the spring. This degree program is open to students with degrees in the arts or the sciences, including architecture, landscape architecture, civil engineering, or other subjects relevant to planning such as economics, anthropology, sociology, law, and computer programming. While students receive broad training in the field of planning as a whole—from problem exploration and design to implementation—they are also given the opportunity to specialize.

As his course work progresses, the student in consultation with his faculty adviser is given increasing responsibility for determining his program of study. The amount of required course work is minimized, allowing the student a great range and number of elective courses. Furthermore, under the research course option, students may instigate studies in topics of their own choosing, with specific faculty members. The opportunity is also available for students to participate in the formulation of major curriculum policies through the student-faculty council (see page 3).

In studio work, a specific area for planning or renewal is selected, and students are assigned to the various aspects of the over-all planning or replanning process, from historical, social, and economic research concerning the selection of a site to design and implementation. While one officer of instruction acts as studio master, other members of the staff come in from time to time, so that all aspects of the project are weighed, discussed, and planned. Wherever feasible, the studios are actual projects undertaken to assist official agencies, nonprofit developers, or indigenous community groups in actual planning and programming.

## ► COURSE REQUIREMENTS FOR THE M.S. DEGREE IN URBAN PLANNING

The course requirements for the M.S. degree in urban planning are listed below. Students are required to earn 60 points of credit for the degree.

| | POINTS |
|---|---|
| 1. Planning A4149x. Urban planning theory (must be taken during the first term of study) | 3 |
| 2. Planning A6109x. Studio workshop (must be taken during the first term of study) | 6 |
| 3. Planning A6110 or Planning A6111. Studio (may be taken in any of the last three terms) | 6 |
| 4. Three of the following five core courses (equivalent courses in these fields may be substituted upon consent of the student's adviser and division chairman): | 9 |
| a. Planning A4178. Social structure of the urban community | |
| b. Planning A6161. Urban design theory | |

| | POINTS |
|---|---|
| c. Planning A6131. Planning engineering: land use and service systems | |
| d. Planning A4157. Planning and the urban political process | |
| e. Planning A4182. Economics of urban development | |
| 5. Three courses which form a sequence in a field of specialization. (This specialty is selected and adjusted to the particular background of each student in consultation with his academic adviser.) The following are some suggested fields of specialization: | 9 |
| a. Systems analysis in planning | |
| b. Housing | |
| c. Social policies planning | |
| d. Planning theory and process | |
| e. Planning in developing countries | |
| f. Regional planning | |
| 6. Planning A6117-A6118. Thesis<br>In the second year of study, the student must complete an approved thesis under the direction of an adviser specially assigned to each student. The thesis topic is determined at the commencement of the second year and must relate to a special aspect of planning selected by the student. Three points should be taken for thesis credit in each of the last two terms. | 6 |
| 7. Electives | 21 |

## Doctor of Philosophy Degree

The Ph.D. candidate specializing in urban planning may have a background in economics, architecture, engineering, sociology, anthropology, law, and other disciplines relevant to urban planning. The subject of the dissertation may also include historical and critical studies in urban and regional planning. Students with a particular interest in these subjects or with a particular interest in developing nations are sometimes invited to participate in the work of the Institute of Urban Environment (see page 29). Research for the Ph.D. dissertation must be original and contribute significantly to literature in the field. It must be of a publishable nature. A physical design will not qualify for a thesis, although a master plan of a region with an accompanying written report may qualify. If the Ph.D. candidate does not have a background in design, design studio courses are required (usually two terms). For admission and degree requirements, see pages 58 and 62.

# Institute of Urban Environment

DIRECTOR: Mr. Chester Rapkin, 503 Avery

ASSISTANT DIRECTOR FOR RESEARCH
Grace Milgram

SENIOR RESEARCH ASSOCIATE
Hans B. C. Spiegel

STAFF ASSOCIATES
Hyung C. Chung
Margaret Latimer

STAFF ASSOCIATES (*continued*)
Stephen D. Mittenthal
Mohammed A. Qadeer

RESEARCH ANALYST
Robert W. Ponte

The purpose of the Institute of Urban Environment is to conduct research in urban problems, both in the United States and in other countries; and to apply the analytic tools and techniques of architecture, planning, and the social sciences to the critical urban issues of our time, for both scholarly purposes and those of policy development. The goal of the Institute is to achieve a better understanding of urban programs and policies. To this end, it seeks to advance the skills and training required to cope with the ever mounting problems of the cities, as well as to satisfy the individual needs of architects, planners, and construction technologists intending to enter the urban professions. Studies are promoted at the Institute which can be useful to governments, private foundations, and international agencies at the same time that they provide a vital educational experience for students. Some of the areas that have come within the purview of Institute research are housing, social planning, urban design, construction technology, water pollution, land values, and planning for the developing countries.

As a center of information and source material, the Institute enables visiting scholars and experts to work on their chosen fields of study relative to the various aspects of urbanization. A further purpose is to stimulate and aid in the provision of courses in urban environment at Columbia, particularly those dealing with the developing countries; and to exchange students and faculty members with foreign universities concerned with urban problems. In special circumstances, the Institute will act as adviser to official agencies and governments here and abroad, or may undertake projects on their behalf.

The Institute draws on the experiences and resources of the divisions of urban planning, architecture, and architectural technology, and cooperates with other departments and institutes of the University.

Colloquia are sponsored by the Institute throughout the year, with guest speakers invited to discuss with faculty and staff members, and others who may desire to participate, topics of mutual interest. Although the Institute has no formal instructional program, special courses are arranged for students, trainees, and executives who have specialized needs that can be met through the multifaceted program of the Institute.

# Key to Course Listings

The University reserves the right to withdraw or modify the courses of instruction or to change the instructors at any time.

*Students may not drop or change courses without official approval.*

### NUMBERING OF COURSES

Each course number consists of a capital letter followed by four digits and the term designation:

*The capital letter* indicates the University division for whose students the course is primarily offered: A, Architecture; B, Business; E, Engineering & Applied Science; F, General Studies; G, Graduate Faculties; P, Public Health and Administrative Medicine; R, School of the Arts.

*The first digit* indicates the level of the course, as follows:

0 Course which cannot be credited toward any degree
1 Undergraduate course
3 Undergraduate course, advanced
4 Graduate course which is open to qualified undergraduates
6 Graduate course
8 Graduate course, advanced
9 Graduate research course or seminar

An *x* following the course number indicates that the course meets in the autumn term; a *y* indicates the spring term.

Two consecutive numbers which are joined with a hyphen indicate a course which runs through both terms (e.g., *Architecture A3121x-A3122y*). The first half is prerequisite to the second half unless the course description says otherwise.

NOTE: Courses given in the School of Public Health and Administrative Medicine follow a different numbering system.

### POINTS OF COURSE CREDIT

The number of points of credit a course carries *per term* (or, in the School of Public Health and Administrative Medicine, *per quarter*) is given in boldface type on the right margin of the course entry. The value of a course in points of credit is calculated at the rate of one point for three hours' work each week in each term. The number of points is not determined by the number of class meetings a week, but by the number of hours of work required. For most courses it is assumed that the student will spend at least two hours in preparation for one hour of lecture, recitation, or seminar.

## WHEN AND WHERE CLASSES MEET

The days, hours, and room assignments for all courses given in the School of Architecture are posted in Avery Hall at the time of registration. Other University divisions on the Morningside campus publish this information in a separate bulletin, which is distributed at registration. The days, hours, and room assignments of courses given at the School of Public Health and Administrative Medicine will be posted in Avery Hall.

# Officers of Instruction and Courses

## Architecture

CHAIRMAN: Mr. Romaldo Giurgola, 406 Avery

PROFESSORS
Charles Abrams
Harry A. Anthony
George R. Collins
John W. Fertig (*Administrative Medicine*)
James M. Fitch
Alfred Frazer
Romaldo Giurgola
Percival Goodman
Cyril M. Harris
Alexander Kouzmanoff
Chester Rapkin
Mario Salvadori
Kenneth A. Smith

ASSOCIATE PROFESSORS
John A. Hagman
Albert O. Halse
Jan Hird Pokorny
Charles J. Rieger
Theodor K. Rohdenburg
Charles W. Thurston

ASSISTANT PROFESSORS
Francis Ferguson
David H. Geiger

INSTRUCTOR
Eugene Santomasso (*Art History*)

VISITING PROFESSOR
Jacob Bakema

ADJUNCT PROFESSORS
Victor F. Christ-Janer
Carl Christian Dauterman (*Art History*)
Edgar Kaufmann, Jr.
Charles E. Peterson
Renato Severino
Danforth W. Toan

ADJUNCT ASSOCIATE PROFESSORS
Robert Burns
Robert H. Chapman
Fred S. Dubin
Ervin Y. Galantay
Frank S. Kristof
Henry Liu
John M. McCormick
Harold Mindell
Oscar Newman
Adolf K. Placzek
Alfred Schimmel
Jay M. Schwamm
Charles P. Winter

ADJUNCT ASSISTANT PROFESSORS
David Glasser
R. M. Kliment
Matthys Levy
George Lewis

LECTURERS

Robert Bedell
Harold K. Bell
Horst Berger
Max Bond
Arthur E. Bye, Jr.
Paul Friedberg
John M. Garber

LECTURERS (*continued*)

Charles Gwathmey
Barry Jackson
Ada Karmi-Melamede
William G. McNeil
Julius Twyne
Frank E. Williams
George Yourke

# *Courses of Instruction*

KEY TO COURSE LISTINGS: See page 30.

## ► FOR BACHELOR OF ARCHITECTURE DEGREE

### ARCHITECTURE: DAY PROGRAM

**Architecture A3101x. Architecture I.** **6 pts**

Messrs. Bond and McNeil.

Introduction to architecture; basic principles of order, form, and design. Observation and evaluation of human activities. Basic exploration of functional, environmental, and structural aspects of building. Design of shelters with models and drawings. Workshop in basic construction, connections, simple points. Seminars: man and environment; values and ideals; function of art.

**Architecture A3102y. Architecture II.** **6 pts**

Messrs. Bond and McNeil.

A continuation of *Architecture A3101*.
Design projects extended to a more complex environmental situation and to a greater technological range. Patterns of motion as they occur in group activities. Elements of architecture. Seminars: formulation of the group environment; basic activities and institutions of man; readings; analysis of meaning in architectural form.

**Architecture A3103x-A3104y. Architecture III and IV.** **6 and 5 pts**

Mr. Kliment and Mrs. Ada Karmi-Melamede. *A3103:* 6 pts. *A3104:* 5 pts.

Major problems in urban areas involving single buildings or small complexes. Qualitative and quantitative research methods and projections; definition of historical, social, and functional character of the area. Translation of analysis in program and form. Integrative aspects of structure and mechanical equipment in buildings.

**Architecture A3105x-A3106y. Architecture: platforms I and II** **7 pts**

Messrs. Glasser, Gwathmey, and Williams; and visiting critics.

Broad areas of interest proposed by students and/or staff result in a variety of architectural problems, and involve the student in the entire design process, including program development and analysis, structural and mechanical considerations, design, and presentation techniques. Design critics are assisted by consultants and by mechanical and structural engineering critics.

**Architecture A3107x-A3108y. Architecture: platforms III and IV.** **8 and 10 pts**

Messrs. Glasser, Gwathmey, and Williams; and visiting critics. *A3107:* 8 pts. *A3108:* 10 pts.

For description, see *Architecture A3105-A3106*.

**Architecture A3001x. Project seminar I.** **1 pt**

Mr. Giurgola, and visiting critics.

Corequisite: *Architecture A3101*.
Introductory studies of disciplines related to the studio projects, including materials, construction technologies, graphics, topography, environmental sciences, and theory. Lectures, laboratory work, and field trips are scheduled throughout the term to correspond to the various stages of the design projects.

**Architecture A3002y. Project seminar II.** **2 pts**

Mr. Giurgola, and visiting critics.

Corequisite: *Architecture A3102*.
A continuation of *Architecture A3001*, including a study of presentation techniques.

**Architecture A3181x-A3182y. Communication and drawing I and II.** **2 pts**

Messrs. Hagman, and Rieger; and visiting instructors.

Sec I: Day Course. Sec II: Evening Course.

Study of graphics fundamental to the ability to communicate in architecture: introduction to freehand and instrument techniques, orthographics, isometrics, shadows, and perspectives; inquiry into freehand presentation techniques, image systems, signage, and color.

### ARCHITECTURE: EVENING PROGRAM

**Architecture A3201x-A3202y. Architecture 1A and 1B: introduction.** **4 and 3 pts**

Mr. Lewis. *A3201:* 4 pts. *A3202:* 3 pts.

Prerequisite or corequisite for *A3201: Architecture A3181.* Prerequisite for *A3202: Architecture A3181* and *Architecture A3121.* Corequisite for *A3202: Architecture A3182.*

The principal objective of first-year design work is the development of the student's visual perception through investigation of problems in basic and architectural design. Two- and three-dimensional work is done, in addition to simple architectural projects. Field trips, sketch problems, and seminar and workshop sessions augment work done in the design studio.

**Architecture A3203x-A3204y. Architecture IIA and IIB: introduction.** **4 and 3 pts**

Mr. Winter. *A3203:* 4 pts. *A3204:* 3 pts.

Prerequisite or corequisite: *Architecture A3182* and *Architecture A3122.*

A minimum of nine hours a week in the studio, with occasional seminars, constitutes a sequence of exercises in the design of three-dimensional form as it occurs in buildings; and the study of structure, utility, and the organization of space. Designs are studied by means of sketches and models and are afterward presented as rendered drawings. Stress is on an orderly manner of procedure. Seminar discussions relate closely to the work in the studio.

**Architecture A3205x-A3206y. Architecture IIIA and IIIB.** **4 and 3 pts**

Mr. Yourke. *A3205:* 4 pts. *A3206:* 3 pts.

Problems in the design of simple buildings and in site planning are presented in a progressive and carefully related series. The criticism of the instructors in design, which accompanies the development of the students' designs, is supplemented by library research and group discussions.

**Architecture A3207x-A3208y. Architecture: platforms 1A and 1B** **4 and 3 pts**

Mr. Toan, and visiting critics. *A3207:* 4 pts. *A3208:* 3 pts.

For description, see *Architecture A3105-A3106,* page 32.

**Architecture A3209x-A3210y. Architecture: platforms IIA and IIB.** **4 and 3 pts**

Mr. Toan, and visiting critics. *A2309:* 4 pts. *A3210:* 3 pts.

For description, see *Architecture A3105-A3106,* page 32.

**Architecture A3211x-A3212y. Architecture: platforms IIIA and IIIB.** **4 and 3 pts**

Mr. Toan, and visiting critics. *A3211:* 4 pts. *A3212:* 3 pts.

For description, see *Architecture A3105-A3106,* page 32.

### THE PHYSICAL WORLD: SCIENCE AND TECHNOLOGY

**Architecture A3121x. Architectural construction I.** **3 pts**

Sec I: Mr. Glasser. Sec II: Instructor to be announced.

Survey course covering introduction to methods and materials of architectural construction. Design criteria for selection of building systems discussed. Special emphasis given to relationship of construction to design process. Field trips to construction sites and fabrication plants.

**Architecture A3122x or y. Architectural construction II.** **3 pts**

Mr. Glasser.

Prerequisite: *Architecture A3121* or the equivalent; *Architecture A3181.*

Analysis and design of detailed construction assemblies. Preparation of elementary construction documents for current design project in progress. Field trips to architectural offices and to building sites.

**Architecture A3124y. Methods of technology.** **3 pts**

Messrs. Berger and Rohdenburg.

Present developments and architectural potential of the steel skeleton and reinforced-concrete frame, analyzed in terms of strength, safety, weatherability, and long-term economy. Related subjects, such as exterior and interior finishes, panel systems, and the integration of mechanical equipment.

**Architecture A3125y. Architectural detailing.** **2 pts**

Instructor to be announced.

The interdependence and function of design drawings and contract drawings. Utilitarian aspects and aesthetic functions of detailing. Techniques, aesthetics, and the commonly used methods of assembly for various architectural elements.

**Architecture A3140y. Environmental sciences survey.** **2 pts**

Instructor to be announced.

The relationships between all aspects of environmental design. The physiological and psychological responses of man to his thermal, luminous, and sonic environments. Mechanical and electrical services are introduced as an integrated component in architectural design, structure, and construction. Lectures are supplemented by field trips, seminars, and assignments.

**Architecture A4141x-A4142y or A4141y-A4142x. Building services I and II.** **3 pts**

Sec I: Mr. Bedell. Sec II: Mr. Burns.

Detailed analysis of scientific theories and of technical resources for environmental control inside buildings. Lighting, heating, cooling, ventilation, and sanitation. Lectures, laboratory assignments, and field trips.

**Architecture A3009x. Applied mathematics.** **2 pts**

Mr. Thurston.

For description, see page 42.

**Architecture A3010x. Structural survey.** **2 pts**

Mr. Salvadori.

Coresquesite: *Architecture A3009* or the passing of an equivalency examination.
An introduction to the basic concepts of structural action by means of models, slides, and films. Both elementary and refined concepts are qualitatively considered without the use of mathematical tools. Special consideration is given to modern structural materials and to both classical and contemporary structural systems.

**Architecture A3011x or y. Statically determinate structures.** **3 pts**

Mr. Geiger. *A3011x:* Evening course. *A3011y:* Day course.

Prerequisite: *Architecture A3009* or the passing of an equivalency examination.
The introduction of statics through the determination of reactions and internal forces of statically determinate beams, cables, three-hinged arches, trusses, and framed domes. Both graphical and analytical techniques are considered. Properties of areas.

**Architecture A3012x or y. Strength of materials.** **3 pts**

Mr. Geiger. *A3012x:* Day course. *A3012y:* Evening course.

Prerequisite: *Architecture A3011.*
The establishment of the relationship between internal forces, properties of cross-sectional areas and material properties and deformations. This is done for various types of loading, including axial loading, and bending—including two material beams and columns. Combined stress will be discussed. Laboratory demonstrations are used to illustrate basic principles. Introduction to indeterminate structures.

**Architelture A3018x or y. Statically indeterminate structures.** **2 pts**

Mr. McCormick. *A3018x:* Evening course. *A3018y:* Day course.

Prerequisite: *Architecture A3012.*
Analysis of statically indeterminate structures. Applications to continuous beams and frames, and arches. Plastic analysis. Approximate solutions. Supervised problem session.

**Architecture A3019y. Digital computer applications in structural analysis and design.** **2 pts**

Mr. Geiger.

Prerequisite: *Architecture A3018.*
Digital computer application in structural analysis and in the choice of structural systems.

**Architecture A3130x-A3131y or A3130y-A3131x. Wood, steel, and reinforced concrete I and II.** **3 pts**

Mr. McCormick.

Application of the principles of structural design and analysis to members used in modern timber, steel frame, and concrete buildings. Use of various handbooks and codes. Laboratory exercises and demonstrations. Various trips to structures under construction.

**Architecture A3132y. Professional practice and project documents.** **2 pts**

Mr. Rohdenburg.

Lectures and seminars on office practice, development of plans, specifications and contracts, and job supervision. Professional ethics, relationships with client and contractor, and legal problems.

**Architecture A4134x. Experimental structures.** **2 pts**

Messrs. DeCampoli and Salvadori.

Laboratory on prefabrication; tensile structures; construction and testing of models; economic analysis; methods of fabrication and erection.

## IDEAS AND ACTIVITIES OF MAN: HUMANITIES, HISTORY, PLANNING

**Architecture A4151x. Evolution of cities.** **2 or 3 pts**

Sec 1: Mr. Galantay. 3 pts. Sec 2: Mr. Garber. 2 pts.

Morphological analysis of urban form. Ecological, social, economic, and cultural determinants of urban structure and growth. The city in history. Case studies and research assignments. Illustrated lectures.

**Architecture A3155x. History of architecture: modern.** **2 pts**

Mr. Kaufmann.

Open only to B.Arch candidates in the fourth year.
European and American architecture from the middle of the eighteenth century to the present. The emergence of ideals and ideas following the democratic and industrial revolutions, launching modern architecture on its development through historicism, aestheticism, and the arts and crafts, until, with art nouveau, expressionism, and "functionalism" in Europe and Wright's organismic approach in this country, architecture had fused its basic concepts into a dependable, flexible approach to modern opportunities.

**Architecture A3156x or y. Seminar in architectural history.** **2 pts**

Instructors to be announced.

Open only to candidates for B.Arch. degree.
Prerequisite: *Architecture A4151, A4152, and A4153.*
Modern architecture since 1945.

**Architecture A4152x. History of architecture I.** **3 pts**

Mr. Giurgola. *A4152x:* Evening Program. *A4152y:* Day Program.

Significant structures and complexes from the Stone Age through the early Middle Ages.

**Architecture A4153x or y. History of architecture II.** **3 pts**

Instructor to be announced. *A4153x:* Day program. *A4153y:* Evening program

Development in European architecture proceeding from the medieval period and the Commerce Revolution through the Renaissance and Baroque to the Industrial Revolution.

**Planning A3161y. Principles of urban design theory.** **3 pts**

Sec 1: Mr. Anthony. Sec 2: Mr. Ferguson.

The nature and elements of urban design. Basic concepts guiding the design of cities and their parts: residential areas, central business districts, shopping centers, industrial parks. Field assignments of functional, economic, and aesthetic analyses of examples in the New York metropolitan area.

**Planning A3182x. Economics of urban land and improvements.** **2 pts**

Sec 1: Mr. Schimmel. Sec 2: Mr. Kristof.

A survey of economic forces affecting the growth of cities and metropolitan areas, the location of activities in such areas, the spatial pattern of land values and land use. Analysis of the real estate market and the economics of building, including problems of planning and financing appropriate projects.

## ► GRADUATE COURSES

The graduate design critics and consultants are Messrs. Bakema, Chapman, Christ-Janer, Fitch, Giurgola, Goodman, Liu, Peterson, and Salvadori.

**Architecture A6129x-A6130y. Architecture: research and design.** **5 and 8 pts**

Mr. Christ-Janer. *A6129:* 5 pts. *A6130:* 8 pts.

Specialized architectural study with emphasis upon programming theory. Individual theses.

**Architecture A6139x-A6140y. Architecture: health facilities.** **6 and 7 pts**

Mr. Chapman. *A6139:* 6 pts. *A6140:* 7 pts.

*A6139:* a series of seminars programmed by the critic, the staff of the School of Public Health and Administrative Medicine, and visitors with expert knowledge in special fields, related to a series of short architectural problems and sketches. *A6140:* a single large project involving the investigation of a major community health problem; the development of a program and its architectural solution. Individual or group work depending upon the needs of the student.

**Architecture A6147x-A6148y. Thesis: selected problems in preservation of the artistic patrimony.** **4 pts**

Mr. Fitch.

*A6147:* the student selects two related subjects in American architecture, landscape, architecture, or decorative arts (e.g., the artist and the movement; the monument and its technological background). He then performs all necessary research. *A6148:* the student prepares his thesis, integrating the two aspects of his completed research into a single major paper (about 10,000 words), which includes measured drawings, visual documentation, bibliography, notes, etc.

**Architecture A6149x-A6150y. Architecture: restoration and preservation.** **5 pts**

Messrs. Fitch and Peterson.

Programs are arranged to coincide with the student's special field of interest. *A6149:* broad problems of historic district restoration. *A6150:* detailed research and design for restoration and/or conversion of some outstanding single historic structure in the district previously studied.

**Architecture A6159x. Architecture: urban design introduction.** **6 pts**

Mr. Liu.

A short design project given independently from the platforms to introduce the student to the major aspects of urban design and methodologies of program development.

**Architecture A6160y. Architecture: urban design platform I.** **6 pts**

Mr. Bakema.

A platform oriented to project scale, renewal, and sector scale problems in urban design, corresponding to different levels of the design process.

**Architecture A6165x-A6166y. Architecture: urban design platforms II and III.**

Mr. Goodman and visiting critics. *A6165:* 8 pts. *A6166:* 10 pts.

**8 and 10 pts**

A design or research project of the student's choice, of urban growth of sector scale, evolving fringe, or new town.

**Architecture A6111x-A6112y. Architecture: advanced studio.** **5 and 8 pts**

The graduate staff. *A6111:* 5 pts. *A6112:* 8 pts.

Prerequisite: *Architecture A6129-A6130* or *A6139-A6140* or *A6149-A6150.*
Advanced design for teaching assistants and students who may wish to or may be required to take additional design.

**Architecture A6001x. Project seminar I.** **2 pts**

Mr. Liu.

A review of various disciplines involved in the development of urban design projects, including design theory, sociology, and quantitative analysis.

**Architecture A6002y. Project seminar II.** **2 pts**

Mr. Bakema.

Seminars related to the platform, in project planning, landscape architecture, agencies of urban development, to familiarize the student with prototypical problems, the design of open spaces, and institutional generators of design.

**Architecture A6003x. Project seminar III.** **2 pts**

Mr. Goodman and the staff.

New developments in related fields. Review of problem identification and problem solving.

**Architecture A6059x-A6060y. The dynamics of urban open space.** **3 pts**

Mr. Friedberg and visiting critics.

Open only to M.S. and fourth-year B.Arch. candidates.
Studies and experiments on the interplay between outdoor space, people, and programmatic content. These studies attempt to uncover new relationships among the forces that comprise the urban matrix, thereby establishing a more positive dynamic environment. Lecture and design seminar.

**Architecture A6134x. Advanced structures.** **3 pts**

Mr. Salvadori.

Prerequisite: *Architecture A3131* or the equivalent, college mathematics through differential and integral calculus, and the instructor's permission.
A study of modern structural systems from the viewpoint of both analysis and design, with particular emphasis on tall frames, shells, and tensile and pneumatic structures. Formal lectures, field trips, and seminars in which particular buildings are considered from the structural viewpoint.

**Architecture A6135x-A6136y. Variables and form in architecture.** **3 pts**

Mr. Jackson.

With the instructor's permission, qualified students may take the second term without having taken the first.
Several mathematical models viewed against a frame of reference of architectural or urban problem-solving. *A6135:* a survey of the use of the computer in architecture: the needs of a complex system are expressed as variables to create a problem structure; allocation of facilities; generating systems; PERT; housing systems; and so on. *A6136:* a studio in which either new theories of problem-solving are evolved or existing theories are tested against the "real world."

**Architecture A6153x-A6154y. Restoration and preservation: seminar.** **2 or 3 pts**

Messrs. Fitch and Peterson.

A survey of current concepts as expressed in legislation, institutions, and actual projects here and abroad. Lectures aimed at familiarizing advanced students with methods of archaeological and bibliographic research, technical problems of restoration and conversion, and curatorial and maintenance problems.

**Architecture A6155x-A6156y. Descriptive analysis of historic buildings.** **2 pts**

Mr. Halse.

Through field trips and laboratory work the student learns to make a thorough and comprehensive survey of actual buildings, analyzing and recording by measurement, photographs, and verbal descriptions. Techniques for summary surveys of whole districts, as a basis for broad conservation policies, are studied. Stylistic analysis of characteristic ornament and decorative devices of various periods in American architecture are made as a means of developing the student's ability to make stylistic identifications and attributions.

**Architecture A6157y. Technology of early American building.** **2 pts**

Mr. Peterson.

A survey of building materials and construction methods from the first settlements on the mainland, in the Caribbean, and in Hawaii until 1860. Needed as background for analyzing and dating old fabrics. Includes lectures by leading authorities and field projects.

**Architecture A6158y. The architecture of North America: 1600–1914.** **3 pts**

Mr. Fitch.

A detailed examination of the main forces—cultural, technical, and ecological—which shaped American architecture from the first settlements to World War I. Special attention is given to domestic, folk, and vernacular buildings. Field trips and a term paper.

**Architecture A6163x-A6164y. Theory and practice of urban design I and II.** **3 pts**

Mr. Newman.

*A6163:* seminars exploring the relationship between the social concerns of contemporary architects and planners and their methods for visually ordering the physical environment. *A6164:* seminars based on case studies of a cross section of the newly built environment, ranging from the project scale to the sector scale.

**Architecture A8049x-A8050y. Research problems in the history of architecture.**

Mr. Placzek. **2 or 3 pts**

For description, see page 47.

**Law-Planning W6141y. Housing and city rebuilding.** **3 pts**

Mr. Berger.

For description, see page 46.

**Planning A4182y. Economics of urban development.** **3 pts**

Mr. Rapkin.

For description, see page 45.

**Planning A6161x. Urban design theory.** **3 pts**

Mr. Anthony.

For description, see page 46.

**Art History F3690. Museum studies: European furniture. 3 pts. Not given in 1970–1971.**

**Art History F3720x. Museum studies. American furniture.** **3 pts**

Mr. Dauterman.

Given at the Metropolitan Museum of Art, 82nd Street and Fifth Avenue.
The principal types of furniture from Pilgrim times to the early Victorian period. Identifying traits of chairmakers and cabinetmakers. Gallery tours for the study of original specimens.

**Art History G8572x. Sources of the "genre Pittoresque."** **3 pts**

Mr. Dauterman.

The factors that contributed to the formation of the extreme anticlassical phase of the rococo movement as expressed in ornamental design, furniture, bronze, silver, and porcelain of France, England, and Germany. Students who have not taken *Art History F3680 or F3690* or their equivalents are assigned required reading covering the essentials of eighteenth-century European decorative arts.

## PUBLIC HEALTH AND ADMINISTRATIVE MEDICINE

**Administrative Medicine P6203. Principles of medical care administration.** **1 pt**

2 hours a week. Third quarter.

Organization of medical care: introduction to hospital administration and organization of medical and paramedical practice. Financing of medical care: principles, systems, and methods of payment and their application to medical care; voluntary prepayment plans and health insurance; union-management and community-operated medical care and prepayment programs. Trends and problems.

**Administrative Medicine P6204. Current topics in medical care.** **1 pt**

1½ hours a week. Fourth quarter.

Problems of current concern in the field of medical care.

**Administrative Medicine P6205. Medical care field trips.** **1 pt**

6 half-day and 2 full-day field trips. Fourth quarter.

A series of field trips, preceded by briefing sessions illustrating material presented in *Administrative Medicine P6203* and *P6204*. The student reinforces his knowledge of various types of medical care programs from people directly involved in their operation.

**Biostatistics P6201. Introduction to vital statistics.** **2 pts**

2 half-days a week. First quarter.

Lectures and laboratory work. Mass data of the health fields; the content of vital statistics; methods of collecting, tabulating, and graphing data; elementary methods of analyzing some of the simpler types of data in terms of averages, percentages, and rates. The laboratory work, which comprises about two thirds of the course, is devoted to the practical application of the methods presented in the lectures.

**Public Health P6206. Social foundations of community health.** **R**

4½ hours a week. First and second quarters.

An analysis of the social and cultural bases of community health action as they are affected by the problems of group life. The history and geography of disease, population change, and the evolution and philosophy of public health are considered, leading to a detailed presentation of the sociological, political, and economic aspects of society in relation to health.

**TJ3107 (Teachers College). Hospital administration.** **2 pts**

Autumn term. Occasional all-day field trips to be arranged.

Hospital organization and community considerations; study of some major departments and the medical staff.

# Architectural Technology

CHAIRMAN: Mr. Mario Salvadori, 605A Seeley W. Mudd

PROFESSORS

Charles W. Bastable, Jr. (*Business*)
Gerald P. Brady (*Business*)
Jewell M. Garrelts (*Civil Engineering*)
Cyril M. Harris
Giulio Pontecorvo (*Business*)
Mario Salvadori
Kenneth A. Smith
Russell A. Taussig (*Business*)

ASSOCIATE PROFESSORS

John C. Burton
Franklin R. Edwards
Sigurd Grava
Dale L. Hiestand (*Business*)
Harry B. Reiling (*Business*)
Robert D. Stoll (*Civil Engineering*)
Charles W. Thurston
Maurice Wilkinson (*Business*)

ASSISTANT PROFESSORS

W. Bruce Bassett
David H. Geiger
Frederick B. Putney

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ADJUNCT PROFESSORS

Renato Severino
Don J. Summa

ADJUNCT ASSOCIATE PROFESSORS

Robert Burns
John M. McCormick

LECTURERS

Robert Bedell
C. Crouch
Gerard F. Fox
Barry Jackson

# *Courses of Instruction*

KEY TO COURSE LISTINGS: See page 30.

**Architecture A3009x. Applied mathematics.** **2 pts**

Mr. Thurston.

A survey of mathematics necessary to the analyses of structures and mechanical systems by modern methods. Included are the elements of algebra, trigonometry, differential calculus, integral calculus. Illustrative examples and student exercises are taken from the field of architectural practice.

**Architecture A4141x-A4142y or A4141y-A4142x. Building services I and II.** **3 pts**

Sec I: Mr. Bedell. Sec II: Mr. Burns.

For description, see page 36.

**Architecture A3139y. Principles of illumination design.** **2 pts**

Mr. Crouch.

Discussion of the general principles of vision, including the unique construction of the eye and its reactions. The various elements of the architect-created environment and their effects on the ability to see, leading to the establishment of visual parameters for design. Analysis of the aesthetic and emotional qualities of light, and an indication of problems still awaiting solution and the impact these solutions may have on design.

**Architecture A4049y. Advanced technology in architecture.** **2 pts**

Mr. Severino.

Consideration of the classical techniques of prefabrication and the technological and economic problems they present. Review of achievements through new methods of prefabrication derived from construction techniques of the automotive and airplane industries; possible new applications of these techniques to prefabricated low- and high-rise buildings, and potential influences on architecture and urban design.

**Architecture A4128x or y. Acoustics.** **2 pts**

Mr. Harris. *A4128x:* Evening course. *A4128y:* Day course.

Detailed analysis of scientific theories and of technical resources for environmental control inside buildings. Lighting; heating, cooling, and ventilation; sanitation. Lectures, laboratory assignments, and field trips.

**Architecture A6134x. Advanced structures.** **3 pts**

Mr. Salvadori.

For description, see page 39.

**Architectural Technology A6801x or y. Professional experience.** **½ pt**

Mr. Salvadori.

The student registers for this course when he registers for his last term of residence. At the end of the term he receives the mark of CP, "credit pending." The CP is changed to a final grade at the end of the required working period.

Upon completion of the required academic year of studies on the campus, a six-month period is required in the office of an architect or consulting engineer, or in the field on a construction project, or in a research laboratory. Three reports are required: the first after two months, the second after four months, and the third at the end of the required working period.

**Architectural Technology A6802x or y. Thesis.** **3 pts**

Mr. Salvadori.

The student registers for this course when he registers for *Architecture A6801* and is graded in the same manner at the end of the term.

Individual thesis on the solution of an architectural problem in one of the technologies of major interest to the student, under the sponsorship of an adviser who may be from any faculty of the University.

**Business B6005. Business in a changing economy.** **3 pts**

Messrs. Edwards, Hiestand, Pontecorvo, and Wilkinson.

Determinants of economic growth and fluctuations; use of national economic accounting systems; interrelations among economic sectors; and problems and implications for business management and for government policy.

**Business B6013. Quantitative methods I: accounting.** **4 pts**

Messrs. Bastable, Burton, Putney, and Taussig.

The basic principles and procedures of accounting and their use in the administration of the business firm.

**Business Law B6901. Legal aspects of business I.** **3 pts**

Messrs. Basset, Brady, Reiling, and Summa.

The role of law in the control and direction of our economy, the functioning of the legal system, and the legal relationships the student will be likely to encounter in various business activities: the attorney-client relationship, torts, contracts, and the law of business organizations.

**Civil Engineering E3141x. Soil mechanics.** **3 pts**

Mr. Stoll.

Identification of granular and plastic soils. Study of basic physical characteristics and influences of soil moisture, freezing, compaction, and other controlling conditions. Lab: soil identification techniques and methods of soil testing.

**Civil Engineering E3142y. Foundation engineering.** **3 pts**

Mr. Stoll.

Stress-strain relationships, theory of consolidation and settlement, strength theory, and conditions of failure. Analysis of stress conditions imposed by structures. Design of foundations and retaining structures. Laboratory: design problems.

**Civil Engineering E4011x. Digital computer applications.** **2 pts**

Mr. Fox.

Prerequisite: a working knowledge of FORTRAN, matrix operations, and elementary concepts from linear structures.

A second course in computer usage, with examples from structural analysis and design, scheduling (critical path problems), network flow, etc. Emphasis is placed on FORTRAN programming for the IBM 360-75.

**Civil Engineering E4221x. Advanced structural analysis.** **3 pts**

Mr. Garrelts.

Basic concepts and theorems used in the analysis of statically indeterminate structures. Stress analysis and influence lines for statically indeterminate structures. Continuous beams, frames, arches, and trusses. Virtual work, method of least work, slope deflection, moment distribution, and relaxation of constraints.

**Civil Engineering E4241x. Soil mechanics and foundations.** **3 pts**

Mr. Stoll.

Not open to students who have taken *Civil Engineering E3141* and *E3142*.

Basic physical properties of soil. Identification and description of granular and plastic soils. Theories of deformation, consolidation, and ultimate failure. Design of foundations and retaining structures. Studies of case histories and relevant controlling conditions.

**Electrical Engineering E4451x-E4452y. Noise pollution: measurement and control.**

Mr. Harris. **3 pts**

Prerequisite: the instructor's permission.

Noise transmission, noise measurement, and control techniques. Specification of noise environments. Community noise surveys. Transportation noise. Effects of noise on men. Personnel protection against noise. Noise legislation. Laboratory and field measurements are included.

**Engineering Math E4811x or y. Digital computers: engineering applications.** **3 pts**

Instructor to be announced.

For section and laboratory information, see School of Engineering and Applied Sciences bulletin.

Computer programming: use of procedure-oriented language. Simple applications: single and multiple parameter design equations, implicit solutions. Methods and solutions for typical engineering problems: analysis flow charts, program details. Introduction to simulation techniques. The laboratory is devoted to detailed discussion of the coding and running of student programs; a computer is available for use.

**Planning A6108x. Computer applications to urban planning.** **3 pts**
Mr. Grava.
For description, see page 49.

**Planning A6131y. Planning engineering: land use and service systems.** **3 pts**
Mr. Grava.
For description, see page 45.

# Urban Planning

CHAIRMAN: Mr. Curtis Jay Berger, 409 Avery

PROFESSORS
Charles Abrams
Harry A. Anthony
Curtis Jay Berger
Demetrios Caraley (*Barnard*)
George Collins
Percival Goodman
Chester Rapkin
Kenneth A. Smith

ASSOCIATE PROFESSORS
Sigurd Grava
George Rand (*Teachers College*)
Granville H. Sewell

ASSISTANT PROFESSOR
Francis Ferguson

INSTRUCTOR
Robert Kolodny

ADJUNCT PROFESSORS
Albert Mayer
S. J. Schulman

ADJUNCT ASSOCIATE PROFESSORS
Eric Carlson
Ervin Galantay
Samuel Joroff
Frank S. Kristof
Peter Rydell
Alfred Schimmel

LECTURERS
Victor Alicea
Leonard Heumann
Stephen R. Rosenthal
Richard J. Watson

STAFF ASSOCIATE
Mohammed A. Qadeer

## *Courses of Instruction*

KEY TO COURSE LISTINGS: See page 30.

**Planning A4149x. Urban planning theory.** **3 pts**
Mr. Heumann.
Open only to candidates for the M.S. degree in urban planning.
Private property and public interest. Theories and policies for land use, misuse, abuse, nonuse, disuse, and reuse. Planning at various government levels. Public and private power structure and the uses of power as they affect planning decision and policy. Class and ethnic problems. The city as a problem and as a frontier. Role of the planner in an urban society.

**Planning A4157y. Planning and the urban political process.** **3 pts**

Mr. Caraley.

An examination of the relation between urban planning and the political process, with particular attention to related government functions likely to involve the professional planner.

**Planning A4174x. Planning statistics and quantitative methods.** **3 pts**

Mr. Rydell.

An introduction to quantitative methods used in planning operations, derived from relevant academic disciplines and professions; evaluation of sources, data, and surveys needed to produce economic, social, demographic, land use, and community facilities information required to aid in making planning decisions; treatment of information in order to maximize its usefulness for planning purposes.

**Planning A4178y. Social structure of the urban community.** **3 pts**

Mr. Rapkin.

Rural and urban definitions; social and economic history of cities; economics of the modern city; patterns of city growth and structure; slums and low-rent districts; urban pathology; poverty, problems and progress; mental health in the metropolis; the movement of people, migration, journey to work, mobility and relocation; social work in planning and renewal; race and housing; patterns of ethnic adaptation; the meaning of space in human relations.

**Planning A4182y. Economics of urban development.** **3 pts**

Mr. Rapkin.

Employment and income trends in urban areas; the economic forces affecting the deployment of urban activities; patterns of land utilization as related to taxation; the role of public policy in guiding growth and change.

**Planning A4183x. Planning law and administration.** **3 pts**

Mr. Schulman.

An analysis of the various legal controls available to carry out official planning policy: zoning, official map and building control, subdivision regulations, building and housing codes, aesthetic and sign regulations, urban renewal. Emphasis is on basic principles of constitutional law and on the interrelationships of legislation, administration, and litigation. Practice in formulation of regulations. The administration of the planning and renewal functions.

**Planning A6109x. Studio workshop.** **6 pts**

Mr. Ferguson.

The studio workshop, taken during the first term of study, provides a testing ground for the analytical and problem-solving techniques of the planning process, while the theory behind it is given in *Planning A4149—Urban planning theory*, taken concurrently. The workshop involves group and individual work in the field and studio, and seminars and lectures given by professional critics who specialize in specific areas of the studio problem.

**Planning A6110x or y. Planning studio II.** **6 pts**

Messrs. Kolodny and Mayer.

Planning problems on the local, municipal, and regional scale, with emphasis on formulating goals and objectives, surveying and analyzing existing physical, social, and economic conditions, diagnosing present trends and future needs, preparing a plan, and proposing means of effecting the plan. Criticism and lectures.

**Planning A6117x-A6118y or A6117y-A6118x. Thesis.** **3 pts**

The staff:

Individual report on a subject of special study. The thesis may be presented either graphically or in essay form.

**Planning A6131y. Planning engineering: land use and service systems.** **3 pts**

Mr. Grava.

Planning procedures and problems related to fixed improvements on land, including land uses and activities; utility systems; transportation and communications systems. Collection of data, theoretical concepts, and planning practice; long-range impact; quantitative and qualitative evaluations of each physical subsystem.

**Planning A6132x. Transportation and land use planning.** **3 pts**

Mr. Grava.

The functional interrelationship of transportation and land use planning; elements of transportation economics; modes of travel, types of vehicles, and terminal facilities and their impact on urban environment; tools for measuring and predicting interregional movement demands; analysis of the major land use and transportation studies; policies for guiding the course of regional growth.

**Planning A6154y. Seminar on planning and design theory.** **3 pts**

Mr. Ferguson.

Open only to second-year students.
Review of the nature of planning and its social context. The "comprehensive" ideal, both in its traditional format and in its contemporary garb, as the "systems approach," including an analysis of the strengths and limitations of this approach; indication of the implications of this ideal for the planner and designer; development of a crude model of process in planning and design.

**Planning A6161x. Urban design theory.** **3 pts**

Mr. Anthony.

Urban design and the planning process; ways of promoting aesthetics in the urban environment; utopias and "ideal" design concepts for cities; contemporary urban design theories and examples of successful innovations; garden city, superblock, residential sector, new towns, shopping centers; the design aspects of urban renewal in central areas; case studies on current American practice.

**Law-Planning W6141y. Housing and city rebuilding.** **3 pts**

Mr. Berger.

Federal, state, and city programs. Public, nonprofit, cooperative, and private housing problems. The role of the entrepreneur. Housing and urban renewal financing. Social, legal, economic, and administrative aspects of land use, housing, and urban renewal. Community improvement and urban planning assistance programs. Selected case studies.

# Electives

Unless otherwise noted, the following courses are open to students in all programs of the School. In choosing electives, students should also consult the bulletins of the other departments of the University. A list of recommended courses from other departments is on pages 50–53.

*Permission of the student's adviser is needed if elective courses are to be credited toward the degree.*

KEY TO COURSE LISTINGS: See page 30.

Courses are given during the day unless otherwise specified.

**Architecture A4021-A4022y. Research I and II.** **2 or 3 pts**

Mr. Smith and staff.

Open only to B.Arch. degree candidates.
Prerequisite: *Architecture A3104* or the equivalent and submission of tentative proposals for research projects before the beginning of the term.
For the third point, students do extra work.
Individual research in historical, technical, scientific, or social aspects of architecture.

**Architecture A6021x-A6022y. Advanced research I and II.** **2 or 3 pts**

Mr. Smith and staff.

Either term may be taken separately.
Open only to candidates for advanced degrees.
Prerequisite: submission of tentative proposals before the beginning of the term.
For the third point, students do extra work.
An introduction to the independent study of technical, scientific, and social aspects of architecture. Each students selects an area for investigation, plans an approach to his chosen subject matter, and develops an adequate presentation of his findings. The project may involve experimentation, accumulation of physical data, consultation with recognized authorities, or surveys of opinion, and is expected to add significantly to the existing knowledge of the chosen subject.

**Architecture A6023x-A6024y. Advanced research III and IV.** **2 or 3 pts**

Mr. Smith and staff.

Open only to candidates for advanced degrees.
For the third point, students do extra work.
An introduction to the independent study of architectural history or theory. Each student selects an area for investigation, plans an approach to his chosen subject matter, and develops an adequate presentation of his findings.

**Architecture A8023x-A8024y. Advanced research V and VI.** **2 or 3 pts**

Mr. Smith and staff.

Open only to Ph.D. candidates.
For the third point, students do extra work.
Individually conducted advanced research into technical aspects of building construction, town planning, and housing.

**Architecture A8049x-A8050y. Research problems in the history of architecture.**

Mr. Placzek. **2 or 3 pts**

Prerequisite: the instructor's permission.
For the third point, students do extra work.
Advanced research in the history of architecture: the rise and development of architectural movements; analysis of particular architects, building types; special monuments; and the development of critical analysis by means of individual reports and discussion.

**Architecture A3009x. Applied mathematics.** **2 pts**

Mr. Thurston. Evening course.

For description, see page 42.

**Architecture A3010x. Structural survey.** **2 pts**

Mr. Salvadori. Evening course.

For description, see page 36.

**Architecture A3019y. Structural analysis and design.** **2 pts**

Mr. Geiger.

For description, see page 37.

**Architecture A3139y. Principles of illumination design.** **2 pts**

Mr. Crouch.

For description, see page 42.

**Architecture A3183x-A3184y. Drawing I and II.** **2 pts**

Mr. Rieger.

Drawings from nature and architecture. Inquiry into spatial notations; image systems and their use; research in three dimensions.

**Architecture A4038y. Business aspects of income-producing property.** **2 pts**

Messrs. Bell and Schwamm. Evening course.

Lectures and seminars in the business aspects of income-producing properties, particularly the effects of financing, leverage, and taxation on investment return. Building projects from preliminary planning stages through land acquisition, financing (interim, permanent, and secondary), and alternative approaches to possible sale of completed structures.

**Architecture A4047x. Developments in construction.** **3 pts**

Mr. Pokorny. Evening course.

Prerequisite: the instructor's permission.
An alternating sequence of student seminars and discussions by specialists, analyzing new structural concepts and building methods in architecture.

**Architecture A4048y. Contemporary materials.** **3 pts**

Mr. Pokorny. Evening course.

Prerequisite: the instructor's permission.
A critical examination of contemporary nonstructural materials and elements of interior design. A series of student seminars, with reviews by specialists in the various topics.

**Architecture A4049y. Advanced technology in architecture.** **2 pts**

Mr. Severino.

For description, see page 42.

**Architecture A4128x or y. Acoustics.** **2 pts**

Mr. Harris. *A4128x:* Evening course.

For description, see page 42.

**Architecture A4151x. Evolution of cities.** **2 or 3 pts**

Sec 1: Mr. Galantay. 3 pts. Sec 2: Mr. Garber 2 pts.

For description, see page 37.

**Architecture A4185x-A4186y or A4185y-A4186x. Architectural presentation.** **2 pts**

Mr. Halse.

Architectural visual presentation in various media, with relation to the design of both interior and exterior subjects. Exploration of graphic techniques. Analysis of color, line, and value as elements of visual communication. A personal approach in a logical fashion is emphasized. The student is encouraged to experiment.

**Architecture A6058y. Landscape architecture.** **2 pts**

Mr. Bye. Evening course.

Landscape architecture as it relates to architecture and site planning. Illustrated lectures which analyze the character of a geographical region; the pictorial and psychological effects of plant life; landscape composition, include scale, atmospheric perspective, landscape illusions, color, light and shade, shape, size, texture, and seasonal change; the importance of plant life to the immediate climate of a site (microclimatology); land forms; rocks, water, terrain; plant ecology; climate; land drainage and grading. A variety of plant forms is also surveyed.

**Architecture A6134x. Advanced structures.** **3 pts**

Mr. Salvadori.

For description, see page 39.

**Architecture A6135x-A6136y. Variables and form in architecture.** **3 pts**

Mr. Jackson.

For description, see page 39.

**Architecture A6153x-A6154y. Restoration and preservation: seminar.** **2 or 3 pts**

Messrs. Fitch and Peterson.

For description, see page 39.

**Architecture A6155x-A6156y. Descriptive analysis of historic buildings.** **2 pts**

Mr. Halse.

For description, see page 39.

**Art History G9660x and y. Historical problems in modern architecture and city planning.** **3 pts**

Mr. Collins.

Prerequisite: the instructor's permission.
Open only to doctoral candidates.
Individual research.

**Planning A4179y. Social aspects of planning.** **3 pts**

Instructor to be announced.

The nature of social planning and its relationship to other types of planning. Social factors in physical planning and their relationships to existing programs including urban renewal.

**Planning A4184y. Social meaning of space.** **3 pts**

Mr. Rand.

Selected reading and discussion on the following aspects of adaptation to the physical environment: the environment and human development—the evolution of space as a fundamental category of thought; sociocultural variations in environmental adaptation; pathology of environmental relations—environment and mental health.

**Planning A4190x. Community planning development.** **3 pts**

Mr. Watson.

Neighborhood control and community participation in the community development process.

**Planning A6025x-A6026y. Advanced research I and II.** **3 pts**

Mr. Smith and staff.

Either term may be taken separately.
Prerequisite: submission of tentative proposals before the beginning of the term.
Individual or small-group research, in conjunction with a faculty member, in areas of the student's choice. Students are responsible for planning and conducting research activities and obtaining a faculty adviser.

**Planning A6108x. Computer application to urban planning.** **3 pts**

Mr. Grava.

An introduction to basic computer terminology, equipment, use, and programming. An investigation and review of the application of electronic data processing in urban planning and municipal operations–data format, handling, input-output requirements, banks and retrieval. The development and use of mathematical models; methods and utilization of graphic output; critical path scheduling. Lectures are accompanied by demonstrations and student work in analysis, programming, and preparation of instruction decks. Auxiliary equipment and the electronic computer at the University Computer Center are utilized.

**Planning A6111y. Studio III.** **6 pts**

Instructor to be announced.

Open only to students with a background in architecture.
An advanced study of a large planning problem in an urban area.

**Planning A6120y. Systems analysis in urban planning.** **3 pts**

Mr. Grava.

Prerequisite: basic computer programming and mathematics, and the instructor's permission.
An exploration of programming, systems analysis, simulation models, operations research, decision theory, and other new management, study, and data handling methods as to their applicability and use in city planning and urban studies. Lectures, seminars, and student projects.

**Planning A6133y. Industrial location in regional planning.** **3 pts**

Mr. Sewell.

Optimum plant location in terms of community values, costs, markets, tax base, urban services, and real estate values; location theory; relocation as disruption of economic and social institutions; planning problems in developing countries.

**Planning A6142x. Seminar in municipal housing programs.** **3 pts**

Mr. Rosenthal.

Open only to second-vear planning students.
A working seminar analyzing the operational aspects of selected municipal housing programs in New York City. Emphasis on quantitative measurement of existing problems, evaluation of present programs, and development of new programs and policies to meet demonstrated needs. Qualified students participate as part-time staff members of the City Housing and Development Administration and receive a stipend.

**Planning A6162y. The utopian community.** **3 pts**

Mr. Goodman.

An examination of utopian communities—real and ideal—from *The Republic* to *Communitas.*

**Planning A6163x. Urban environment management.** **3 pts**

Mr. Sewell.

Physical ecology of the urban environment. A technological, economic, political, social, and biological examination of contemporary issues in natural environment controls, including air and water pollution, estuarine development, noise, pesticide and herbicide use.

**Planning A6170y. Contemporary European city planning.** **3 pts**

Mr. Anthony.

Illustrated discussions on current city planning theory and practice in Great Britain, the Netherlands, France, and Scandinavia.

**Planning A6176y. Regional science seminar.** **3 pts**

Mr. Rydell.

Emphasis on urban development models (e.g., Herbert Steven's linear programming model; Lowry's "instant metropolis" model), with attention to some observed regularities of urban spatial structure, local theory, interaction theory, and regional development models.

**Planning A6180y. Planning problems in the urbanizing world: seminar.** **3 pts**

Mr. Sewell and guest lecturers.

Population growth and urban formations. The squatting problem. Land problems and policies. Financing for development. Administration and training for development. Self-help formulas. Emerging norms and practices. Ten case studies based on missions and reports.

**Planning A6181y. Special problems in the urbanization of Latin America.** **3 pts**

Mr. Galantay.

Origins and morphology of Latin American cities. Ecological aspects. Functional topology. Growth patterns. Social determinants of urban form. Comparative case studies of eight cities and city regions.

**Planning A6182y. Modernization and planning experience in South Asia.** **3 pts**

Mr. Qadeer.

Economic development and social change in South Asia. Spatial strategies for modernization; concentration or dispersal. Socioeconomic consequences of locations of various facilities and services. Urbanization in India, Pakistan, and Iran. Comparison with western models. Agricultural development and space use in rural areas. Patterns of industrial locations, their costs and benefits. Urban problems and planning experience. New towns and urban design.

**Planning A8170y. Urbanization and housing policies in the developing world.** **3 pts**

Mr. Carlson. Evening course.

Development and organization of international and national programs for dealing with problems of urbanization and housing for the world's rapidly growing population. Examples of projects in various regions. Interprofessional collaboration. Review and analysis of current activities of the United Nations, A.I.D., World Bank, and other international agencies dealing with environmental improvement, urban planning, and housing.

## ► SUGGESTED ELECTIVES FOR ARCHITECTURE STUDENTS

### SCHOOL OF THE ARTS

Courses which are listed with asterisks require the written permission of Professor André Racz.

***Drawing R1001-R1002 and R1003-R1004. Drawing workshop**

**Film R4001. Communication through film, radio, and television**

***Painting R1001-R1012 and R1013-R1014. Painting workshop**

***Sculpture R1025-R1026. Carving and design**

### GENERAL STUDIES

**Anthropology V3011. Social organization**

**Anthropology V3201. Physical anthropology**

**Art History F3650. Twentieth-century art**

**Geography F3105. Geographic interpretations of human experience**

**Geology W4661. Introduction to paleontology**

### GENERAL STUDIES (continued)

History G6721. History of the city of New York

Philosophy F1103-F1104. The history of philosophy

Philosophy F1105. Elementary logic

Political Science. The political setting of public administration

Psychology G4083. Sensation and perception

Sociology F1202. Introduction of sociological analysis

Sociology F3141. Communities

Sociology F3421. Readings in the sociology of knowledge

### THE GRADUATE FACULTIES

Anthropology G4173. Community studies in complex cultures

Art History G4410. The classical tradition and the Renaissance

Art History G4552. Baroque architecture in Rome

Art History G8713. Frank Lloyd Wright

Business Economics B8225. The regional economies of the United States

Economics G4201. Introduction to microeconomic analysis

Economics G4235-G4236. The history of economic thought

English G4502. Contemporary literature

Geography G4030. Cultural geography

Mathematics G4401. Numerical analysis and digital computers, I

Mathematics G4402. Numerical analysis and digital computers, II

Music G4601-G4602. Electronic music

Psychology G6061. Basic concepts in modern psychology

### SCHOOL OF ENGINEERING AND APPLIED SCIENCE

C.E. E4233. Prestressed concrete structures

C.E. E3141. Soil mechanics

C.E. E3142. Foundation engineering

## ► SUGGESTED ELECTIVES FOR ARCHITECTURAL TECHNOLOGY STUDENTS

### THE GRADUATE FACULTIES

Art History G4660. Modern architecture: the twentieth century

Art History G4710. American architecture

Art History G8666. The architect as city planner

### SCHOOL OF BUSINESS

Management B9752. Seminar in business enterprise

Business B6014. Statistical analysis and inference

Business B6015. Operations research

### SCHOOL OF ENGINEERING AND APPLIED SCIENCE

I.E. E6001. The engineering of management, B.

I.E. E4300. Industrial economics

Engr. Math. E3200. Ordinary differential equations, I

C.E. E3141. Soil Mechanics

C.E. E3142. Foundation engineering

C.E. E4233. Prestressed concrete structures

Engr. Math. E4200. Partial differential equations Ia

C.E. E6330. Linear structural analysis

C.E. E6331. Theory of structural design

C.E. E6351-E6352. Foundation Engineering

Engr. E. 4113. Mechanics of solids, II

Engr. E4124. Theory of plates and shells

Architecture S6143. Advanced environmental system

Art History S4660. Modern architecture

Business B6005. Business in a changing economy

Business B3013. Quantitative methods, I: accounting

Business Law B6901. Legal aspects of business, I

# ► SUGGESTED ELECTIVES FOR PLANNING STUDENTS

## THE GRADUATE FACULTIES

Anthropology G4122. Human ecology

Anthropology G4173. Community studies in complex cultures

Anthropology G4192. Culture change and applied anthropology

Anthropology G9311-G9312. Seminar in structural theory and analysis

Economics G4201. Introduction to microeconomic analysis

Economics G4211-G4212. Microeconomic analysis

Economics G4411-G4412. Economic statistics

Economics G6228. Urban economics

Economics G6301. Economic growth and development

Economics G6302. Economic planning

Economics G6805. Public finance

Economics G8813. Colloquium in fiscal problems of metropolitan areas

Geography G4020. Economic geography

Geography W4011. Soil science

Geography W4012. Hydrology and resource management

Geography W4018. Cartography

Geology W4007. Principles of geology

History G6722. History of the state of New York

History-Sociology G6098. Historical method and documentary analysis

Mathematical Statistics–Sociology G4181-G4182. Statistical methods in the social sciences

Political Science G4231. Government and politics in metropolitan regions

Political Science G4241. The political setting of public administration

Psychology G4311. General social psychology

Psychology G4343. Methods in attitude research

Psychology G4555. The motivation of behavior

Sociology G4022. Population

Sociology G4051. Social change: modernization

Sociology G6038. Use of surveys in the study of social problems

Sociology G6045. Elements of organization

Sociology G6068. Analysis of planned social action

Sociology G6088. The use of census-type data

Sociology G6097. Survey methods

Sociology G8015-G8016. Analysis of social structures

Sociology G8044. Social change

Sociology G9017. The uses of sociology

## SCHOOL OF LAW

Law L6116. Property

Law L6477. Metropolitan problems

Law L6483. Real estate transactions

Law L9183. Seminar in urban and human renewal

Law L9004. Seminar in advanced real estate transactions

## SCHOOL OF BUSINESS

Business Economics B8225. The regional economies of the United States

Industrial Relations B8415-B8416. Human resources and economic welfare

Management B9750. Organization theory

Production Systems B6701. Production systems management

Production Systems B8718. Systems analysis and simulation

Quantitative Analysis B6933. Managerial aspects of electronic data processing

Quantitative Analysis B8934. Operations research: management science

Quantitative Analysis B9911. Mathematical methods, I: mathematical analysis, finite mathematics, linear algebra, mathematical programming

Quantitative Analysis B9912. Mathematical methods, II: probability theory, statistics, and decision theory

Quantitative Analysis B9913. Mathematical methods, III: stochastic processes, model building, and networks

Transportation B6942. Economics of transportation

Transportation B8943. Physical distribution: process, organization, and administration

## SCHOOL OF ENGINEERING AND APPLIED SCIENCE

Industrial Engineering. Plant layout and material handling

## SCHOOL OF SOCIAL WORK

T6401. Community organization, I

T6402. Community organization, II

T6801. Social policy and social welfare, I

T6802. Social policy and social welfare, II

## TEACHERS COLLEGE

TR3300. Leisure and recreation in modern society

TT4150-TT4151. Contemporary art

TW3275. Urban geography

# Admission

OFFICE OF ARCHITECTURE ADMISSIONS: 400 Avery

*Office hours:* Monday through Friday, 10 to 4; evening by appointment

*Telephone:* (Area code 212) 280–3510

In considering a candidate for admission to the School of Architecture, the Committee on Admissions is interested in his potential for intellectual and professional growth. A student's admission depends, therefore, on his demonstrated intellectual capacity and preparation in his field of study, and on his expectation of professional attainment.

## ► ADMISSION PROCEDURE

Application forms may be obtained from the Office of Architecture Admissions and should be completed in accordance with the instructions accompanying them. Applicants should request the registrar of each of the colleges and scientific schools he has attended to send an official transcript of his work directly to the Office of Architecture Admissions. Three letters of recommendation are required and should be submitted to the Office directly by the sponsors. A personal statement is required of all applicants. Information on additional required supporting materials is listed below under the name of the degree offered.

### APPLICATION DEADLINES

FOR DEGREE CANDIDATES

*Autumn term:* Applications must be received by February 15.
Scholarship applications must be received by February 15.

*Spring term:* Only the bachelor of architecture evening program and the architectural technology program offer spring admissions. Applications must be received by December 30.

FOR SPECIAL STUDENTS

*Autumn term:* Applications must be received by September 1.

*Spring term:* Applications must be received by January 15.

*No application will be forwarded to the Committee on Admissions until all supporting documents and materials have been received. It is the applicant's responsibility to make sure that all of the materials he has requested and submitted have been received prior to the deadline for receipt of applications.*

#### DEPOSIT

An applicant who has been accepted for admission as a degree candidate is required to pay a $50 deposit to the University within fifteen days after the notice of his acceptance. This deposit is applied toward his tuition when he registers; if he does not register, it will not be refunded for any reason except entry into military service or the Peace Corps. Application for refund must be made in writing at the time of the admission cancellation. Credit for the deposit may be extended for (1) twelve months when an applicant fails to register due to illness or other causes beyond his control, or (2) the period of active duty in the military service or Peace Corps. Proof of any extenuating circumstances may be required.

When the University has received the deposit fee, the applicant will be issued a permit to register. If the fee has not been paid within fifteen days after he has received the notice of acceptance, he will forfeit the place in the School that has been reserved for him.

## ► BACHELOR OF ARCHITECTURE DEGREE

Day school: eight terms. Evening school: twelve terms.

Students are admitted to the day session in the autumn term only, and they must attend on a full-time basis. Students are admitted to the evening session in both the autumn and the spring terms.

#### ACADEMIC PREPARATION

All applicants must have completed a minimum of two academic years of study (60 points or 90 quarter hours) of undergraduate liberal arts at an accredited college or scientific school. Preference will be given to students who hold undergraduate degrees or who are enrolled in one of the School's professional option programs. The liberal arts preparation must include the following:

| | *Years* |
|---|---|
| English composition and literature | 2 |
| Modern foreign language (preferably French or German) | 2 |
| Analytical geometry, differential and integral calculus | 1 |
| Physics | 1 |
| Economics, government, or sociology | 1 |
| European history | 1 |

A one-year course in painting or drawing is highly recommended.

Applicants with deficiencies in the liberal arts courses listed above are sometimes admitted, but these deficiencies must amount to no more than 15 points, and must be made up, through course work, before the student has completed 35 points of work in the architecture program.

*Students with deficiencies in mathematics or science must complete courses in these subjects during the summer immediately preceding the autumn term in which they will register for the first time.*

Students are urged to consult the admissions officer before enrolling in liberal arts courses which are to be used to make up deficiencies. Students must submit to the Office of Admission official transcripts of the courses completed to make up these deficiencies.

### SUPPORTING MATERIALS

In addition to the application form and required supporting documents, applicants must submit a portfolio of paintings, drawings, prints, or graphic designs. Preferably, portfolios should not exceed 12 by 18 inches. They will be returned by mail only if sufficient postage and packaging are included and if return addresses are indicated on the portfolios.

### ADMISSION AS A TRANSFER STUDENT

Applicants who wish to transfer from another architectural program must meet the 60-point liberal arts requirement. Advanced standing toward the B.Arch. degree for all relevant courses taken at other institutions is given only upon the recommendation of the faculty members in charge of the appropriate courses at Columbia and with the written approval of the Dean and the student records official. Advanced standing will be awarded only in courses in which students have obtained a grade of C or better. No requests for advanced standing will be considered until official copies of relevant transcripts have been submitted to the Student Records Office. In some cases, faculty members may ask to see examples of previous course work.

Courses may be waived on the basis of professional experience or examinations in subject matter. Waivers do not carry point or course credit, and approved elective courses must be taken to fulfill the point requirements for the degree.

Advanced standing and waivers are granted officially only after the students have completed 15 points of work in the School. An estimate of the course work which prospective transfer students would be required to complete may be obtained during an interview with the Dean or one of his representatives and must be determined before or during the registration period. *All transfer students must complete a minimum of 50 points of course work at Columbia to obtain the Bachelor of Architecture degree.*

### PROFESSIONAL OPTION PLAN

The University provides opportunities for students in Barnard College, Columbia College, and the School of General Studies to obtain their B.A. or B.S. degrees while completing the first year of the B.Arch. program of the School of Architecture. Since the details vary in each undergraduate division, the student should consult the bulletin of the particular division in which he will be or is registered. Similar programs are available to, or have been arranged with, students from Bard, Kenyon, Mount Holyoke, and Swarthmore Colleges. It is expected that similar arrangements will be made with other colleges and universities.

Applicants may enter only in the autumn term; they must attend on a full-time basis.

## ► MASTER OF SCIENCE DEGREE IN ARCHITECTURE (two terms)

All applicants for admission to the program leading to the M.S. degree in Architecture must have a B.Arch. degree or the equivalent. In addition to the application form and required supporting documents, applicants must submit a portfolio containing examples of their architectural designs, particularly from the last two years of undergraduate training. Preferably, the portfolio should not exceed 12 by 18 inches and should be submitted with the application. It will be returned by mail only if sufficient postage and packaging are included and if the return address is indicated on the portfolio.

Applicants for the M.S. program in architecture may enter only in the autumn term; they must attend on a full-time basis.

The programs in special fields are: (1) architectural research and design, (2) hospital and public health planning and design, (3) preservation and restoration of historic buildings. In addition, individual programs will be arranged for those students interested in environmental design, architectural history, and educational facilities planning and design.

## ► MASTER OF SCIENCE DEGREE IN ARCHITECTURAL TECHNOLOGY (two terms)

Applicants for admission to the program leading to the M.S. degree in architectural technology must hold the B.S. degree in civil engineering or the equivalent, of the B.Arch. degree or the equivalent. All applicants must take the Aptitude Test of the Graduate Record Examination; they are urged to take it no later than two months before their application is due. Information may be obtained from Graduate Record Examination, Educational Testing Service, Box 955, Princeton, New Jersey 08540.

Since several of the requirements for this degree may be taken in the evening, it is possible to enroll in this program on a part-time basis. Applicants may enter in either the autumn or the spring term.

## ► MASTER OF SCIENCE DEGREE IN URBAN DESIGN (four terms)

All applicants for admission to the program leading to the M.S. degree in urban design must have a B.Arch. degree or the equivalent. In addition to the application form and required supporting documents, applicants must submit a portfolio containing examples of their architectural designs, particularly from the last two years of training. Preferably, the portfolio should not exceed 12 by 18 inches and should be submitted with the application. It will be returned by mail only if sufficient postage and packaging are included and the return address is indicated on the portfolio.
Applicants may enter only in the autumn term; they must attend on a full-time basis.

## ► MASTER OF SCIENCE DEGREE IN URBAN PLANNING (four terms)

Since the program leading to the M.S. degree in urban planning is designed to prepare students from many different backgrounds for careers in the planning field, applicants may hold degrees in professional fields such as architecture, engineering, planning, and law. They may also hold degrees in the social sciences, usually sociology, political science, geography, or economics. Applicants may enter only in the autumn term; they must attend on a full-time basis. A course in elementary statistics and a course in economics, sociology, or political science are required before entrance into the program.

All applicants must submit examples of their design work or of term papers with their application and are required to take the Aptitude Test of the Graduate Record Examination. The test should be taken no later than two months before applications are due. Information may be obtained from Graduate Record Examination, Educational Testing Service, Box 955, Princeton, New Jersey 08540.

## ► CERTIFICATE IN RESTORATION AND PRESERVATION (four terms)

Candidates for the M.A. degree in history may be admitted to a two-year joint program leading to a certificate in the restoration and preservation of historic architecture. Applicants for this program must apply to both the Graduate Faculties and the School of Architecture. Students should consult the bulletin of the Graduate Faculties concerning requirements for admission to the history program.

## ► DOCTOR OF PHILOSOPHY DEGREE

The programs leading to the Ph.D. degree are for students who wish to prepare themselves for professional careers in teaching or research. The University gives preference to applicants who have completed their undergraduate work within the last five years.

An applicant must hold, or expect to receive before his enrollment, a bachelor's degree in arts, letters, philosophy, or science. The degree work must ordinarily include no less than 90 points of liberal arts: courses in the humanities, the social sciences, and the pure sciences. Professional courses, such as architecture, are not credited towards the liberal arts requirement. The liberal arts requirement is ordinarily not fulfilled by the usual degree in architecture or engineering. An applicant whose only degree is in one of these fields should therefore be prepared to complete certain liberal arts requirements which will be outlined to him by the Graduate Faculties Director of Admissions and Financial Aid before he can be admitted as a regular student in the doctoral program.

Applicants must apply on the Graduate Faculties application forms and should not use School of Architecture forms.

For further information on the program, the applicant should consult the appropriate sections of this bulletin, as well as the bulletin of the Graduate Faculties.

## ► SPECIAL STUDENTS

Certain introductory courses in architecture and urban planning except design studios are open to special students (students who are not candidates for a degree). If, however, at a later date, a special student wishes to apply for matriculation in either the B.Arch. or M.S. degree programs, the Admissions Committee will not treat his application preferentially. In addition, introductory courses are available to college students during the Summer Session. Those interested in applying should consult the bulletin of the Summer Sesstion for information on course offerings and application procedure.

Many advanced courses of interest to professional architects and planners are offered throughout the calendar year. Professional architects and planners who wish to take one or more of these courses must formally apply for admission and register as special students. Requests for application forms, general information, and information on specific course requirements should be directed to the Office of Architecture Admissions.

Students who take courses as special students and are later admitted to a degree program may be awarded advanced standing for up to 15 points of work taken as a special student. Those who wish to apply for degree candidacy are therefore urged to do so at the earliest possible time.

## ► FOREIGN STUDENTS

The School welcomes foreign students and admits a number each year to its various programs. Since financial aid is limited and since most foreign students can obtain their first professional degree or undergraduate degree at institutions in their own or nearby countries, it is recommended that those who require financial aid in order to study at Columbia should obtain their first degree at home and apply for advanced degrees in the School of Architecture.

All foreign applicants must first file a preliminary application with the Foreign Student Center, Columbia University. If this application shows that they are eligible, an application for admission to the School will be forwarded to them by The Foreign Student Center. Students interested in applying should begin the application procedure one year before they wish to enter.

Students from countries where the Institute of International Education maintains offices should apply through the Institute. Students in Great Britain should apply through the English Speaking Union. The United States embassies, consular offices, and information offices can supply information about the above agencies and also about Fulbright Travel Grants for students coming to study in the United States.

All foreign students must pass an examination in the English language before they will be accepted. They will be tested again when they enter the University and may be required to take courses in English. Difficulties with the language or with adapting to a foreign country and new methods of instruction may require a foreign student to spend more than the minimum scheduled time to complete the program at the School.

### ORIENTATION PROGRAM FOR NEW FOREIGN STUDENTS

The Foreign Student Center orientation program for new foreign students is held each fall to introduce students to the Center and its services, to the University, and to New York City. All new foreign students are required to attend. The five-day program begins September 15 at 10 a.m. in the auditorium of Earl Hall.

The program includes the English Language Placement Test, information about registration, meetings with a dean or professor of the school in which the student is enrolled, tours of the campus and the library, a reception to meet the President of the University, a coffee hour with the International Union, and an opportunity to visit an American family.

# Degree Requirements

The requirements for the various degrees are outlined in the required and suggested programs of the three divisions. In addition, the student must meet the requirements given below.

## ► CURRICULUM

Students are responsible for the completion of the curriculum in the stated order. Petitions for exceptions may be made, in writing, to the Dean. Students in the evening program are expected to proceed with the programs as outlined and to enter the last year of full-time study within eight years of the time they became degree candidates. This period will be reduced in the case of students who enter with advanced standing.

While the curricula, with the exception of the doctoral program, are for specified periods of one, two, or four years, these are minimum periods and not guaranteed times for completing the degree requirements, particularly in the design sequence.

## ► DESIGN REVIEW

A comprehensive review by the faculty and staff of the design work of every B.Arch. candidate is made at the end of the second year in the day program, or at the end of the third year in the evening program. The student must earn a satisfactory recommendation from the design review committee and must complete all courses prerequisite to the third year in the day program, or the fourth year in the evening program, before he will be allowed to register for the next design course. The committee may recommend that the student be dropped or that he be required to complete additional design work and submit to another review before being permitted to proceed to the next year of the design program.

## ► ACADEMIC STANDING

The Faculty requires quality performance of the students it admits. In general, Bachelor of Architecture degree candidates are expected to maintain a B– average after the first year and to achieve a B— cumulative average in all required work to qualify for the degree. All graduate students are on a provisional basis for the first term and are expected to maintain a B average to remain in the School and to qualify for the degree for which they are registered. While consideration will be given to particular cases where a student's work has suffered because of illness or, in the case of foreign students, because of language difficulties, the student may be required to take additional work to demonstrate that he has overcome the problems which have resulted in his poor record.

## ► DOCTOR OF PHILOSOPHY DEGREE

The doctoral study program prepares candidates for academic careers in teaching and research; it is not intended to be an advanced professional training program. The academic orientation of the program is evident from the fact that it is sponsored by the Graduate Faculties rather than by the School of Architecture.

The program aims to help candidates acquire comprehensive and meaningful understanding of processes shaping urban environment and to discover ways of directing these processes through policies and programs to realize social goals. Thus, attainment of a high level of individual scholarship and a demonstrated capacity for research are the two significant criteria for judging a candidate's suitability for the award of the Ph.D. degree.

The course requirement and choice of fields of specialization have been defined broadly to allow candidates some freedom to follow their intellectual inclinations. Prospective students are advised to consult the Graduate Faculties bulletin for further information.

In brief, the requirements for the Ph.D. degree are as follows:

*Courses:* every candidate is required to complete 60 points of course work, of which at least 30 points must be earned in residence at Columbia.

*Languages:* a candidate must demonstrate the ability to read and translate professional literature from two foreign languages. In special cases mathematics may be substituted for one of the two required languages.

*Certifying examinations:* after completing the course work and language requirements, a student must pass an oral and written examination to be certified as a Ph.D. candidate.

*Dissertation:* a publishable research report presented in the form of a dissertation and its defense is the final requirement for the Ph.D. degree.

The student is expected to complete all requirements within a period of seven years after his initial enrollment. Those granted advanced standing must complete their studies in a correspondingly shorter period.

Application forms and a bulletin of the Graduate Faculties can be obtained from the Graduate Faculties Office of Admissions and Financial Aid, 106 Low Memorial Library, Columbia University, New York, N.Y. 10027.

# Registration and Expenses

## ► REGISTRATION

The registration procedure for new students is as follows (see the Academic Calendar for dates):

1. The students reports to the Administration Office, 405 Avery, where he obtains his registration cards and has his program approved.
2. He takes the signed forms to the Registrar's Office, 204 Kent, for processing.
3. He pays his fees at the Bursar's Office 210 Kent.

*Students in the Master of Architecture hospital program* report to Room 510 at the School of Public Health and Administrative Medicine after they have completed the above registration procedure. They will be asked to fill out a Course Permission Form A-2 and a Course Application Blank A-3 for each course which they will take at the School of Public Health and Administrative Medicine. Signatures are required on both forms: from the professor of the course and from the design critic in charge of the program. Students who do not complete these forms will not be considered registered by the School of Public Health and Administrative Medicine.

On registration days, Monday through Friday, the Registrar's Office, 208 Philosophy, is open from 9 a.m. to 8 p.m.

The Administration Office is open during registration periods from 10 a.m. to 12 noon and 2 to 5 p.m.

New students obtain approval of programs of study in the evening session from Professor Pokorny, 405A Avery, during the registration period: 10 a.m. to 12 noon, 2 to 5 and 6 to 8 p.m.

*All students will be asked to give social security numbers when registering in the University. Those who do not now have a number should obtain one from their local social security office well in advance of registration.*

Registration for the second year of the day session will not be permitted until all entrance deficiencies have been removed unless special arrangements have been made with the Administration Office before the end of the first year.

*Note:* Students who are not citizens of the United States and who are registering at the University for the first time must secure a clearance from The Foreign Student Center before registering for their courses.

## ► AUDITING COURSES

Degree candidates who are registered for 15 points or more in the current term may audit one or two courses in any division of the University without charge. Application is made at the Registrar's Office, 208 Philosophy, during the change-of-program period in each term: Monday, September 28, through Friday, October 2, for the autumn term; Monday, February 8, through Friday, February 12, for the spring term. Applications may not be filed before or after these dates.

Applications require (*a*) the certification of the Registrar that the student is eligible to audit, and (*b*) the approval of the dean of the school in which the courses are offered. For approval to audit Graduate Faculties courses, consult the Graduate Faculties division in the Registrar's Office. For obvious reasons, elementary language courses, laboratory courses, and seminars will not be open to auditors. Other courses may be closed because of space limitations. In no case will an audited course appear on the student's record, nor is it possible to turn an audited course into a credit course by paying the fee after the fact.

## ► CHANGES IN PROGRAMS OF STUDY

A student who wishes to drop courses or to make other changes in his program of study must obtain written approval from the Student Records Office on a special form which is issued by the Registrar's Office. The deadline for making program changes in each term is the second Friday after classes have begun (see the Academic Calendar). In no case will permission to drop courses be granted after January 1 for the autumn term and after May 1 for the spring term.

Tuition for courses dropped during the change-of-program period will be refunded in full, but the comprehensive fee will not be reduced. For courses dropped after the last day for change-of-program, no adjustment will be made.

## ► GRADES

The grading system is as follows: A, excellent; B, good; C, fair; D, poor; F, failure. Plus and minus grades are also used. The grade of P (passed) is sometimes used in place of the usual letter grades. No more than 8 points with the grade of D will be credited toward the B.Arch. degree; no points with this grade will be credited toward the M.S. degree. A student must repeat any required course in which he received the grade of F.

*The mark of R (registration credit; no qualitative grade earned):* accepted for degree credit only in the M.S. degree program in urban planning or in the doctoral programs. The mark of R is given only to those students who indicate, upon registration, that they intend to take the course for R credit, or who file notice of change of intention with the office of the Registrar not later than the last day for change of program. Students wishing to change to R credit after this date are required to submit the Dean's written approval to the Registrar. (The mark of R is entered on the student's record by the Registrar, and thus is not a grade given by the instructor.) It should be noted further that a course which has been taken for R credit may not be repeated later for examination credit.

*The mark of ABS (absent from the final examination):* granted by the instructor, not later than the day of the examination, to a student whose attendance and progress have been satisfactory and who cannot be present because of sickness or some other extreme emergency. The student must take a special examination, either in October or in early April. He must file an application in advance at the Registrar's Office and pay a fee of $10 (see the Academic Calendar for deadline

dates). If the ABS is not removed within one year, it will automatically be changed to an F.

*The mark of INC (incomplete):* given to a student who has satisfactorily met all the requirements of a course except for the completion of certain assigned papers or reports which he has been compelled to postpone for reasons beyond his control and satisfactory to the instructor. If the INC is not removed by the completion of the required work within one year, it will be automatically changed to an F. *The mark of INC cannot be assigned without approval from the Administration Office.*

*The mark of YC (year course):* given at the end of the first term of a course in which the full year's work must be completed before a qualitative grade is assigned. The grade given at the end of the second term is the grade for the entire course.

*The mark of CP (credit pending):* given only in graduate research courses in which student research projects regularly extend beyond the end of the term. Upon completion, a final qualitative grade is assigned and credit allowed. The mark of CP implies satisfactory progress.

## ► REGULATIONS

Each person whose registration has been completed will be considered a student of the University during the term for which he is registered unless his connection with the University is officially severed by withdrawal or otherwise. No student registered in any school or college of the University shall at the same time be registered in any other school or college, either of Columbia University or of any other institution, without the specific authorization of the dean or director of the school or college of the University in which he is first registered.

The privileges of the University are not available to any student until he has completed his registration. Since, under the University statutes, payment of fees is part of registration, no student's registration is complete until his fees have been paid. No student is permitted to attend any University course for which he is not officially registered unless he has been granted auditing privileges. No student may register after the stated period unless he obtains the written consent of the proper dean or director. No student is officially withdrawn from a course unless he has filed the proper form with the office of the Registrar.

### ATTENDANCE AND LENGTH OF RESIDENCE

The minimum residence requirement for each Columbia degree is 30 points of course work completed at Columbia University. Therefore, a student who wishes to receive both a master's degree and a doctorate from Columbia should be aware that any advanced standing awarded for graduate work completed elsewhere will not reduce the 60 points of residence credit required for obtaining both degrees.

Students are held accountable for absences incurred owing to late enrollment. Any student whose religious duties conflict at any time with academic requirements should apply to his dean or director for an equitable solution.

### LEAVES OF ABSENCE

All degree candidates who enrolled for the first time in September 1962 or thereafter are required to attend the School continuously until they have completed all the course requirements for their degree. If a student wishes to interrupt his studies for any reason, he must apply in writing to the Dean, stating the reason and period of the leave. A leave already granted may be extended at the discretion of the Dean.

### READMISSION AFTER AN UNAUTHORIZED ABSENCE

Students who absent themselves without obtaining a leave of absence must apply for readmission to the School. This formal application must be made to the Admissions Office *at least one month* before the student expects to resume his studies.

### ACADEMIC DISCIPLINE

The continuance of each student upon the rolls of the University, the receipt by him of academic credits, his graduation, and the conferring of any degree or the granting of any certificate are strictly subject to the disciplinary powers of the University.

## ► ESTIMATED EXPENSES

The approximate cost of attending the University for the academic year of nine months is as follows:

| | |
|---|---|
| Tuition and fees for a 30-point program | $2,460.00 |
| Living expenses (room, board, books, clothing, laundry, travel, sundries) | 1,800.00 |
| | $4,260.00 |

### MATERIALS

Books and supplies for first-year students will cost around $100; for others, around $75. The School furnishes lockers and drafting tables, but students must supply their own paper, instruments, and materials.

The School reserves the right to retain a copy of any work submitted for credit—drawings, designs, plates, essays, or models, as well as any fellowship competition drawings—whether submitted by graduates or by students in residence.

### PERSONAL EXPENSES

The Univerity advises each student to open an account in one of the local banks as soon as he arrives in New York City. Since it often takes as long as three weeks for the first deposit to clear, he should cover his immediate expenses by bringing with him travelers' checks or a draft drawn on a local bank.

Tuition and room rent may of course be paid by check, and any excess will be refunded to the student after the check has cleared.

### INCOME TAX DEDUCTIONS

According to Treasury decision 6291, under Section 162 of the 1954 Internal Revenue Code, income tax deductions are allowed in many instances for tuition and other educational expenses. Students are referred to the federal ruling on income tax deductions for teachers and other professional people seeking to maintain or improve skills required in their employment.

## ► FEES

The following fees, prescribed by statute *for each autumn or spring term,* are subject to change at any time at the discretion of the Trustees:

### COMPREHENSIVE FEE

| | |
|---|---|
| For degree candidates engaged only in research | $75.00 |

### TUITION

| | |
|---|---|
| For all courses, per point, except where a special fee is fixed | $ 80.00 |
| With the proviso that for degree candidates the fee for a program of 15 or more points is | 1,200.00 |

### HEALTH SERVICE FEE AND HEALTH INSURANCE PREMIUM

| | |
|---|---|
| Health Service fee, per term (see page 69) | $12.00 |
| Student accident and health insurance premium | |
| For the autumn term (October 1–February 1) | |
| Student only | 12.00 |
| Additional cost for spouse (optional)* | 16.00 |
| Additional cost for spouse and one or more unmarried children under the age of nineteen (optional)* | 28.00 |
| For the spring term and summer period (February 1–October 1) | |
| Student only | 24.00 |
| Additional cost for spouse (optional)* | 32.00 |
| Additional cost for spouse and one or more unmarried children under the age of nineteen (optional)* | 58.00 |

### APPLICATION FEES AND LATE FEES

| | |
|---|---|
| Application for admission as a degree candidate | $20.00 |
| Application for admission as a special student | 5.00 |
| Application for each special examination | 10.00 |
| Renewal of application for a degree (see below) | 1.00 |
| Late registration | 6.00 |
| Late application for a special examination | 5.00 |
| Late application, or late renewal of application, for a degree | 5.00 |

* Dependent coverage is available upon application to Brown, Crosby & Co., Inc., 110 William Street, New York, N.Y. 10038. The premium for this coverage is paid directly to the Company by the student.

### PAYMENT OF FEES

Tuition, the comprehensive fee, the health insurance premium, the health service fee, and laboratory fees are payable each term in advance and as part of registration. If these fees are paid after the last day of registration (see the Academic Calendar), they will not be reduced, and a late fee of $6 will be imposed.

### WITHDRAWAL AND ADJUSTMENT OF FEES

A student in good academic standing who is not subject to discipline will always be given an honorable discharge if he wishes to withdraw from the University. If he is under twenty-one years of age, his parent or guardian must first give consent in writing to the proper dean or director.

Any student withdrawing must notify the Registrar in writing at once; any adjustment of the tuition that he has paid is reckoned from the date on which the Registrar receives this written notification. (For partial withdrawal, see "Changes in Programs of Study.")

The health service fee, health insurance premium, application fees, and late fees are not refundable. Up to and including the last day of change-of-program week (see the Academic Calendar) the following amount will always be retained:

| | |
|---|---|
| Students registered for 12 or more points | $50.00 |
| Students registered for less than 12 points | 25.00 |

An additional percentage of the remaining total tuition charged (as indicated in the following schedule) will be retained for each week, or part of a week, that the student remains registered after the last day of change-of-program week. The student is considered registered until the date on which his written notice of withdrawal is received by the Registrar.

ADJUSTMENT SCHEDULE

| | *Minimum Fees Retained* | *Percentage of Remaining Tuition Retained* |
|---|---|---|
| First week of classes | $25 or $50 | 0 |
| Following week | 25 or 50 | 10 |
| Second following week | 25 or 50 | 20 |
| Third following week | 25 or 50 | 30 |
| Fourth following week | 25 or 50 | 45 |
| Fifth following week | 25 or 50 | 60 |
| Sixth following week | 25 or 50 | 75 |
| Seventh following week | 25 or 50 | 90 |
| Eighth following week | 25 or 50 | 100 (no adjustment) |

### APPLICATION OR RENEWAL OF APPLICATION FOR A DEGREE

A candidate for a degree must file application by the date specified in the Academic Calendar. If the degree is not earned by the next regular time for the issuance of diplomas, subsequent to the date of filing, the application must be renewed for a fee of $1. Doctoral degrees are awarded whenever the candidate completes the requirements. Other degrees are awarded three times a year—in October, February, and June.

#### REQUESTS FOR TRANSCRIPTS

Transcripts may be requested by writing to the Office of the Registrar, 201 Philosophy. *Official* transcripts must be sent by the University directly to an official address such as another university, a college, a business firm, or a government agency. However, a student may request that an unofficial transcript (stamped "Student Copy") be sent to him. There is a charge of $1 for each transcript requested except those which are sent between offices of Columbia University.

## ► MEDICAL CARE AND INSURANCE

The University has authorized a two-part program of health service to protect and promote the health of its students. First is the University Health Service itself, which provides the following services to students who pay the health service fee: (1) ten days of bed care in the infirmary each term and four days of ward care in St. Luke's Hospital; (2) laboratory studies and x-rays ordered by the Health Service; (3) medical, surgical, and psychiatric consultation in the Health Service; and (4) one consultation with a specialist when recommended by a Health Service physician.

Second is the Student Accident and Health Insurance (SAHI), which supplements the Health Service by providing coverage against in or out of hospital accident and in-hospital illness anywhere in the world throughout the entire calendar year. The benefits under the policy are described in a brochure which may be obtained from the Columbia University Health Service, 1901 Amsterdam Avenue, New York, N.Y. 10025, or from the Registrar's Office, Bills and Charges Division, 208 Philosophy Hall, Columbia University, New York, N.Y. 10027. Briefly, SAHI provides benefits of up to $500 for each in or out of hospital accident or in-hospital illness, after which it pays 80 percent for all costs up to a total of $5,000 (with a limitation of $1,500 for mental illness). Within the limits of the schedule given in the brochure, coverage includes hospital room and board; surgeons', nurses', and physicians' fees in the hospital; hospital services and supplies; and ambulance service. The policy can, if the student elects to pay a higher premium, be extended to cover his spouse and one or more unmarried children under nineteen years of age (see the schedule of fees).

The health service fee and the cost of the SAHI premium are automatically charged (*a*) all students registered for 12 or more points and (*b*) all students certified as full-time by their departments regardless of points. Students living in the University residence halls who are not included in categories (*a*) or (*b*) will be charged the health service fee only. A part-time student who is registered for less than 12 points but more than 6 points may, if he wishes, participate in the combined health service–SAHI program by filing application in the Registrar's Office not later than the last day for change of program and by paying the fee and the premium. A student registered for 6 points or less is entitled only to emergency first-aid care in the University Health Service.

A student who already has an accident and health insurance policy will be exempted from paying the SAHI premium if he can show proof of comparable coverage (for example, a Blue Cross–Blue Shield Identification Card). The dead-

line for submitting proof of comparable coverage to the Registrar's Office is the Friday following the last day for change of program.

The costs of the medical care and insurance program are listed in the schedule of fees on page 67.

## ► HOUSING

The University provides limited housing for undergraduate and graduate men and women, both single and married. Inquiries about men's housing and the accommodations for married students should be directed to the Residence Halls Office, 125 Livingston Hall. Women students should write to the women's residence hall, Johnson Hall, 411 West 116th Street. The University residence halls are shown on the campus map (inside back cover).

Rates in the graduate men's residence halls range from $535 to $670 for the academic year. Meals are available in the University dining halls on a cash basis. All rates are subject to change.

In Johnson Hall, room rates for the academic year range from $510 to $725, with $625 the median rate. All residents are charged for breakfast and dinner at Johnson Hall five days a week, at a cost of $500 for the academic year, exclusive of weekends and the Christmas holidays. All rates are subject to change.

Woodbridge Hall, at 431 Riverside Drive, is a University residence hall for married graduate students. Each apartment contains a living room, a bedroom, a complete kitchen, and a bathroom; basic furniture is provided. Rates range from $1,380 to $1,740 a year, including utilities, and assignment is for the full calendar year. These apartments are large enough to accommodate a couple with one child.

Burgess, at 542 West 112th Street, is a newly renovated, air-conditioned building for married graduate students. Accommodations range from efficiency apartments (one room plus kitchenette and bath) to two-bedroom apartments; basic furniture is provided. Rates range from $132 to $215 a month, including utilities. Requests for further information and for application forms should be directed to the Office of University Housing, 400 West 119th Street, New York, N.Y. 10027.

Students who wish to live in furnished rooms or apartments off campus should consult the Registry of Off-Campus Accommodations, 401 West 117th Street, for information. Single rooms in private apartments range from $15 to $20 a week, double rooms, from $20 to $25. Most apartments, when available, are in the price range of $160 to $250 a month.

International House, a privately owned student residence near the campus, has accommodations for about five hundred graduate students, both foreign and American. Rates are $80 to $100 a month, including continental breakfast. To be eligible for admission a student must be at least twenty-one years old and must be registered for at least 12 points or for a program of full-time research. Inquiries should be addressed to the Committee on Admissions, International House, 500 Riverside Drive, New York, N.Y. 10027.

## ► UNIVERSITY STUDENT HANDBOOK

The *University Student Handbook* describes all the services and facilities maintained by the University for students in the Graduate Faculties, the School of General Studies, and the professional schools on the Morningside campus. The handbook furnishes such information as the location of the various libraries, how to get student-rate tickets, where to find placement officers, where to rent a typewriter, and so on.

Copies are distributed at registration. Any student who fails to pick up his copy then may obtain one at the Information Center, Office of the Secretary, 201 Dodge, after registration.

# Financial Aid

## ► FELLOWSHIPS AND SCHOLARSHIPS

The School of Architecture awards fellowships and scholarships to its students in annual competition. A fellowship is an academic honor accompanied by an award which defrays tuition and fees and, in addition, may provide a stipend for living expenses. Fellowships are usually reserved for graduate study. A scholarship is an award, on grounds of scholarly competence and need, which defrays all or part of the cost of tuition and fees but carries no additional cash stipend. Scholarships may be awarded to graduates and undergraduates, but are not available to students registered in the evening program. The term of each award, except for traveling fellowships, is one academic year.

No services to the School or to the donor of the fellowship or scholarship are required, nor shall there be any restriction on publication of studies or research as a condition of the grant.

Fellows and scholars, unless they are traveling fellows, are expected to reside in New York City or its vicinity during the term of the award in order to devote full time to academic studies. A fellow or a scholar may accept employment only when written permission is granted by the Dean.

Stipends are paid by the Bursar in two installments: one-half at the time of registration for the autumn term, the remainder at the beginning of the spring term. The fellow or scholar must register not later than the registration dates specified in the Academic Calendar, or the School will consider the fellowship or scholarship vacated and may appoint someone else in his place.

Fellowships and scholarships may be cancelled at any time for failure to maintain a satisfactory academic standard or to comply with the terms of the award.

### APPLICATION PROCEDURE

Fellowships and scholarships have already been awarded for 1970–1971. Applications for the year 1971–1972 will be accepted by the Office of Architecture Admissions beginning October 16, 1970. Applicants for admission who are also applicants for fellowships or scholarships must submit the application by February 15, 1971. Applicants for fellowships or scholarships who are currently enrolled in the School but who are applying for admission to a second degree program must also submit the application for admission and fellowships by February 15. The special forms on which application must be made can be obtained by writing to, or calling, the Office of Architecture Admissions. Awards will be announced in April.

Applicants for financial aid who are currently enrolled in the B.Arch. or M.S. planning programs of the School should apply for grants-in-aid (see page 79).

## ENDOWED FELLOWSHIPS AND SCHOLARSHIPS

ARCHITECTURE ALUMNI FUND FOR STUDENT AID

One partial tuition scholarship awarded annually. Gift of the Architecture Alumni Association.

LEOPOLD ARNAUD SCHOLARSHIP

One partial-tuition scholarship awarded annually. Gift of various donors.

QUINCY WARD BOESE FELLOWSHIP

One fellowship awarded annually. Bequest of Quincy Ward Boese.

BORING TRAVELING FELLOWSHIP

One fellowship awarded in competition to graduates every sixth year. Gift of Edward C. Moore, Jr.

GEORGE W. ELLIS FELLOWSHIPS

Two fellowships awarded annually to graduate students who are residents of the state of Vermont or who are graduates of a Vermont college or university. These awards are open to students in other divisions of the University as well as to architecture students. The bequest of George W. Ellis.

WILLIAM KINNE FELLOWS TRAVELING FELLOWSHIPS

Several fellowships awarded annually. Open to members of the graduating class for study and travel for a period of at least three months.

WILLIAM KINNE FELLOWS SUMMER SCHOLARSHIPS

Several scholarships awarded annually. Open to members of the graduating class for study and travel during the summer before their final year.

EDWARD HALE KENDALL SCHOLARSHIP

One scholarship awarded annually. Bequest of Edward Hale Kendall.

VINCENT G. KLING SCHOLARSHIP

One scholarship awarded annually to a third- or fourth-year student who shows promise in design. Gift of the employees of Vincent G. Kling and Associates.

CHARLES F. MCKIM TRAVELING FELLOWSHIP

One fellowship awarded every sixth year. Open to graduates of the School. Gift of Charles F. McKim.

WILLARD B. PERKINS TRAVELING FELLOWSHIP

One fellowship awarded every sixth year. Bequest of Willard B. Perkins.

JAMES RENWICK, JR., SCHOLARSHIP

One scholarship awarded annually. Bequest of Anna Cooper Renwick.

LYDIA C. ROBERTS FELLOWSHIPS

Five fellowships awarded annually. Open to students born in Iowa who have been graduated from an Iowa college or university. Each holder, when accep-

ing the award, must state that it is his purpose to return to Iowa for at least two years after he completes his studies at Columbia. Holders are eligible to apply for reappointment. These awards are open to students in other divisions of the University as well as to architecture students. A gift of Lydia C. Chamberlain.

F. AUGUSTUS SCHERMERHORN SCHOLARSHIP

One scholarship awarded every sixth year. Established by the Trustees in honor of F. Augustus Schermerhorn.

LILA W. VAN DER SMISSEN SCHOLARSHIP

One scholarship awarded annually.

GEORGE BRECHER WEITZMAN FELLOWSHIP

One scholarship for the study of architectural history awarded annually to a graduate student who has received a bachelor's degree in architecture. Gift of Morris Brecher.

## NATIONAL, REGIONAL, AND FOUNDATION FELLOWSHIPS

AMERICAN INSTITUTE OF ARCHITECTS—AMERICAN INSTITUTE OF ARCHITECTS FOUNDATION SCHOLARSHIPS PROGRAM

Applications and information may be obtained from the American Institute of Architects, Scholarship Program, 1735 New York Avenue, N.W., Washington, D.C. 20006. The deadline for filing applications is November 30.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Since 1867 the United States Department of Housing and Urban Development has awarded fellowships (under its City Planning and Urban Studies Fellowship Program) to several School of Architecture applicants. Applications and further information may be obtained from the Office of Housing and Urban Development, Urban Studies Fellowship Program, Washington, D.C. 20410. The deadline for filing applications is March 1.

LOULA D. LASKER FOUNDATION FELLOWSHIPS IN CITY PLANNING, HOUSING, AND URBAN RENEWAL

Awarded to students enrolled in a graduate degree program in urban planning, housing, urban renewal, conservation, or redevelopment. Recommendations are made by the school to which the candidate is applying. Forms are available directly from the Foundation, Room 800, 917 Fifteenth Street, N.W., Washington, D.C., 20005, and should be submitted with the application for admission to the school of the candidate's first or second choice.

HERBERT H. LEHMAN FELLOWSHIPS

Predoctoral fellowships are offered for study in the social sciences and international affairs. Awards may extend for up to four years. Applications may be obtained from the State Education Department, Regents Examination and Scholarship Center, Albany, New York, 12201. The deadline is December 1.

NATIONAL SCIENCE FOUNDATION GRADUATE FELLOWSHIPS

Annual predoctoral fellowships are offered for study in engineering, the pure sciences, and the social sciences. Applications are available from the National Science Foundation, Washington, D.C., and are due by December 5.

NEW YORK STATE REGENTS COLLEGE TEACHING FELLOWSHIPS

Annual predoctoral fellowships are open to legal residents of New York State for doctoral study in preparation for college teaching. Recipients must indicate their intent to teach in an institution of higher learning within the State upon graduation. Applications may be obtained from the State Education Department, Regents Examination and Scholarship Center, Albany, New York 12201, and are due December 1.

PUBLIC HEALTH SERVICE FELLOWSHIPS

Predoctoral fellowships are available to students in the basic sciences or the social sciences for work relating to problems of health and disease. Applications are obtained by writing to the Chief, Career Development Review Branch, Division of Research Grants, National Institutes of Health, Bethesda, Maryland 20014, and are due by December 1.

SEARS ROEBUCK FOUNDATION GRADUATE FELLOWSHIPS IN CITY PLANNING AND URBAN RENEWAL

Fellowships and scholarships for students beginning graduate study in urban planning who are United States citizens. The candidate must apply on a form available from the Foundation, 3333 Arthington Street, Chicago, Illinois, 60607, and submit the application, together with his application for admission, to the school of his first choice.

JOHN HAY WHITNEY FOUNDATION OPPORTUNITY FELLOWSHIPS

The John Hay Whitney Foundation offers Opportunity Fellowships for seniors in college or college graduates planning or already engaged in graduate or professional studies who are United States citizens with racial or cultural backgrounds or regions of original residence as follows: Negroes, Spanish-Americans, American Indians, and residents of the Southern Appalachian and Ozark Mountain areas, Guam, Puerto Rico, Samoa, the Pacific Trust Territory, and the Virgin Islands. Applications may be obtained from the John Hay Whitney Foundation, 111 West 50th Street, New York, New York 10020. The deadline for filing applications is November 30.

## INTERNATIONAL FELLOWS PROGRAM

The International Fellows Program was created for outstanding American graduate students who wish to use their professional training on an international level. The program is open to men under 30 who are American citizens and who have been admitted to graduate degree programs in Columbia University. Admission is based on the applicant's character, motivation, collegiate record, and professional

promise; on the recommendations of his instructors; and particularly on his demonstrated ability and estimated potential for leadership in his chosen field and in the field of international affairs.

Each International Fellow follows the program of study prescribed by the graduate school or department of the University in which he is enrolled. In addition he is required to take a full-year course, *IFP W6045-W6046—The role of the United States in world affairs,* open only to International Fellows. In both terms, each Fellow is required to give an oral summary of a proposed position paper on an international topic, to prepare the paper, and to take a final examination. Fellows in the urban planning division of the School of Architecture receive 4 points of elective credit for this course.

In addition to formal classes, the International Fellows have an extensive program of extracurricular activities. A special six-day session is held each September at the United Nations, and the Fellows make two three-day trips to Washington to meet with Congressional leaders and executives of the Pentagon, the State Department, the White House, USIA, AID, and other agencies.

Candidates in need of financial assistance may be granted stipends to defray part of their expenses. For information about the program and for application forms, write directly to the International Fellows Program, Box 18, Law School Building, 435 West 116th Street, Columbia University, New York, N.Y. 10027. Applications must be submitted by February 1.

#### UNIVERSITY FELLOWSHIPS AND SCHOLARSHIPS

Several fellowships and scholarships for graduate and undergraduate study are awarded annually from funds provided by the University. In order to be considered, applicants merely submit the financial aid request of the School of Architecture application to the Admissions Office by February 15. Current students submit a grant-in-aid application which may be obtained from the Admissions Office during the spring term.

## ► NEW YORK STATE SCHOLAR INCENTIVE AWARDS

Any student who has been a legal resident of New York State for the preceding year is entitled to a Scholar Incentive Award for each term in which he is registered as a full-time degree candidate. The amount of this award is based upon the net taxable balance of his income and the income of those responsible for his support, as reported on the New York State income tax return for the previous calendar year.

Application forms and further information may be obtained from the Department of Education, Regents Examination and Scholarship Center, Albany, N.Y. 12201. Application for awards should be filed three months in advance of the beginning of the term for which the grant is to apply. Please note that the Columbia University School of Architecture is classified as a graduate school by New York State.

## ► MEDALS AND PRIZES

ALPHA RHO CHI MEDAL

Awarded annually to the student who has shown ability in leadership and who gives promise of professional merit through his attitude and personality.

ALUMNI MEDAL

Awarded annually to the student in the graduating class who has shown throughout the course the greatest promise in design.

AMERICAN INSTITUTE OF ARCHITECTS MEDAL

A medal and a copy of Henry Adams' *Mont Saint-Michel and Chartres* awarded annually to the student who has maintained the best general standard in all departments during the entire professional course. A copy of the book is also given to the alternate for the prize.

BORING MEDAL

Awarded annually to the winner of the Boring Prize Competition.

HAMLIN MEDAL

Awarded annually to the winner of the Hamlin Prize Competition.

CHARLES A. HARRIMAN PRIZE

A prize of $15 awarded annually to the student who has shown the greatest progress in the visual communications courses throughout the professional program.

MORTIMER HIRSH MEMORIAL PRIZE

A prize of $75 awarded to the student who submits the best research paper in the history or theory of architecture.

LUCILLE SMYSER LOWENFISH MEMORIAL PRIZES

Two cash prizes awarded annually for the purchase of professional books to the students in the graduating class who submit the best undergraduate terminal problems.

NEW YORK SOCIETY OF ARCHITECTS MEDAL

Awarded annually to the student who has maintained the highest standard during the entire professional course.

FRANK DEMPSTER SHERMAN PRIZE

A prize of $15 awarded annually to the winner of the Sherman Prize Competition.

VAN DER SMISSEN MEDAL

Awarded annually to the student of the graduating class who has shown the greatest spirit of cooperation and friendship during the entire course.

WARREN MEDAL

Awarded annually to the winner of the Warren Prize Competition.

HENRY WRIGHT PRIZE

A prize of $15 awarded annually to the winner of the Henry Wright Prize Competition.

## ► ASSISTANTSHIPS

Six two-year teaching assistantships are available to candidates for the M.S. degree in architecture and in urban planning. Assistants divide their time equally between their studies and various tasks, helping faculty members in instruction, in administration, and in the work of the Institute.

Research assistantships are available to candidates for the M.S. or Ph.D. degrees in urban planning.

## ► LOANS

The University provides loan funds for full-time degree candidates in good standing whose need is evident and who are making satisfactory progress toward the degree. Students who are interested in applying for loans should consult the Office of Architecture Admissions.

### COLUMBIA UNIVERSITY LOANS

A full-time degree candidate may apply for a long-term, low-interest University loan. At the present time, no interest is charged on a loan as long as the student is registered as a full-time degree candidate at Columbia. Upon ceasing to be so registered, however, interest (3 percent simple) begins to accrue and repayment must begin. Repayment terms usually require that a student repay a minimum of $150 each year, although this amount may be increased according to his ability to pay. The usual loan for a single student does not exceed $1,000 per year.

### STATE LOANS

Legal residents of the State of New York who are degree candidates are eligible to apply for loans guaranteed by the New York Higher Education Assistance Corporation. No interest is charged as long as a student is registered for at least 6 points of course work at Columbia and his adjusted family income does not exceed $15,000, but 7 percent interest and repayment of the principal must begin when a student ceases to be so registered. Repayment may be spread over a ten-year period. Further information and application forms may be obtained from the Office of Architecture Admissions and Financial Aid.

Other states, notably Massachusetts and New Jersey, also have loan plans of a similar kind. Students should inquire at the local commercial banks.

### NATIONAL DEFENSE STUDENT LOAN PROGRAM

Federal loan funds are available to students under the National Defense Student Loan Program (Title II of the National Defense Education Act of 1958). The Office of Architecture Admissions can supply further information.

## ► GRANTS-IN-AID

Grants-in-aid are awarded to B.Arch. and M.S. planning candidates who are currently registered in their degree program at the time of application and who have shown evidence of financial need, integrity, and scholarship. The grant is usually awarded in conjunction with a student loan.

Application forms for grants-in-aid are available in the Office of Architecture admissions after January 14. Applications must be returned to the Admissions Office before May 1, if they are to be considered for the following academic year. Awards will not be announced until all of the spring grades have been received.

## ► STUDENT EMPLOYMENT

*The schedules of architecture students are so heavy that very little time is left for part-time work.* However, those students who must work part time should consult the Financial Aid Officer, who will recommend jobs under the Work-Study Program.

Wives of students may also register with the Division for part-time work. Those who are interested in *full-time jobs* on the campus should contact the University Personnel Office, 209 Dodge. Most of these jobs require typing and many require shorthand as well. Full-time University employees are eligible for 6 points of tuition exemption in each term, provided they qualify for admission and meet the deadlines for application to the University division in which they wish to enroll. Tuition-exempt courses are taken primarily in evening classes in the School of General Studies.

A list of opportunities for summer employment and full-time employment for graduates in architectural offices is maintained in the Dean's Office.

# Academic Calendar, 1970-1971

## AUTUMN TERM

**Sept 2** Wednesday. Last day to apply for admission to the autumn term as a special student.

**15–19** Tuesday–Saturday. Foreign Student Center orientation program for new foreign students (see page 60).

**16** Wednesday. First quarter begins, School of Public Health and Administrative Medicine.

**21–23** Monday–Wednesday.* Registration, including payment of fees.

**24** Thursday. Classes begin, School of Architecture. Late registration begins.

**28** Monday. First day to change programs and apply to audit courses.

**Oct 2** Friday. Last day to (1) register for credit, (2) change programs, and (3) apply to audit courses.

**5–9** Monday–Friday. Special examinations.

**28** Wednesday. Award of October degrees.

**Nov 3** Tuesday. Election Day. Holiday.

**11** Wednesday. Midterm date.

**14** Saturday. First quarter ends, School of Public Health and Administrative Medicine.

**16** Monday. Second quarter begins, School of Public Health and Administrative Medicine.

**26–29 Thursday–Sunday. Thanksgiving holidays.**

**Dec 1** Tuesday.† Last day to apply or reapply for all degrees, except doctoral degrees, to be awarded in February (see January 21).

**16** Wednesday. Award of December degrees.

**20 Sunday, through January 3, 1971, Sunday. Christmas holidays.**

**Jan 14** Thursday. Last day to apply for admission to the spring term as a special student.

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* Students allowed to register after the period specified must pay a late fee.
† Students who apply after this date must pay a late fee.

**Jan 18–28** Monday–Thursday. Midyear course examinations. Term ends, School of Architecture.

**21** Thursday. Last day to file *late* application for February degrees.

**30** Saturday. Second quarter ends, School of Public Health and Administrative Medicine.

**SPRING TERM**

**Jan 29** Friday, and February 1–2, Monday–Tuesday.* Registration, including payment of fees.

**Feb 1** Monday. Third quarter begins, School of Public Health and Administrative Medicine.

**2** Tuesday. Last day to apply for final Ph.D. examinations to be held during the term.

**3** Wednesday. Classes begin, School of Architecture. Late registration begins.

**8** Monday. First day to change programs and apply to audit courses.

**12** Friday. Last day to (1) register for credit, (2) change programs, and (3) apply to audit courses.

**15** Monday. Last day to apply for 1970–1971 admission to the School of Architecture. Last day for current graduate students in the School of Architecture to apply for a second degree program.

**24** **Wednesday. Award of February degrees.**

**Mar 1** Monday. Last day to apply or reapply for all degrees, except doctoral degrees, to be awarded in June (see May 3). Last day to apply for special examinations to be held during the term.†

**12** Friday. Last day for submission of dissertations by Ph.D. candidates who wish to stand for the final examination in the spring term.

**26** Friday. Midterm date.

**26–28** Friday–Sunday. Easter holidays, School of Public Health and Administrative Medicine.

**27** Saturday. Third quarter ends, School of Public Health and Administrative Medicine.

**28** **Sunday, through April 4, Sunday. Spring holidays, School of Architecture.**

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* Students allowed to register after the period specified must pay a late fee.
† Students who apply after this date must pay a late fee.

**Mar 29** Monday. Fourth quarter begins, School of Public Health and Administrative Medicine.

**Apr 5–9** Monday–Friday. Special examinations.

**May 3** Monday. Last day to file *late* application for degrees to be awarded in June.

**17–27** Monday–Thursday. Final course examinations. Term ends, School of Architecture.

**31** Monday. Memorial Day. Holiday. Fourth quarter ends, School of Public Health and Administrative Medicine.

### COMMENCEMENT

**May 30** Sunday. Baccalaureate Service.

**June 1** **Tuesday. Conferring of degrees.**

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**Aug 2** Monday.* Last day to apply or reapply for all degrees to be awarded in October.

**Sept 1** Wednesday. Last day to apply for special examinations to be held in October.

### REGISTRATION FOR THE SUMMER SESSION, 1971

**June 10–11** Thursday–Friday.* Registration for first six-week graduate and undergraduate session.

**14** Monday. First six-week graduate and undergraduate session begins.

**July 1–2** Thursday–Friday.* Registration for second six-week graduate and undergraduate session.

**6** Tuesday. Second six-week graduate and undergraduate session begins.

**22–23** Thursday–Friday.* Registration for third six-week graduate and undergraduate session.

**26** Monday. Third six-week graduate and undergraduate session begins.

### REGISTRATION FOR THE AUTUMN TERM, 1971

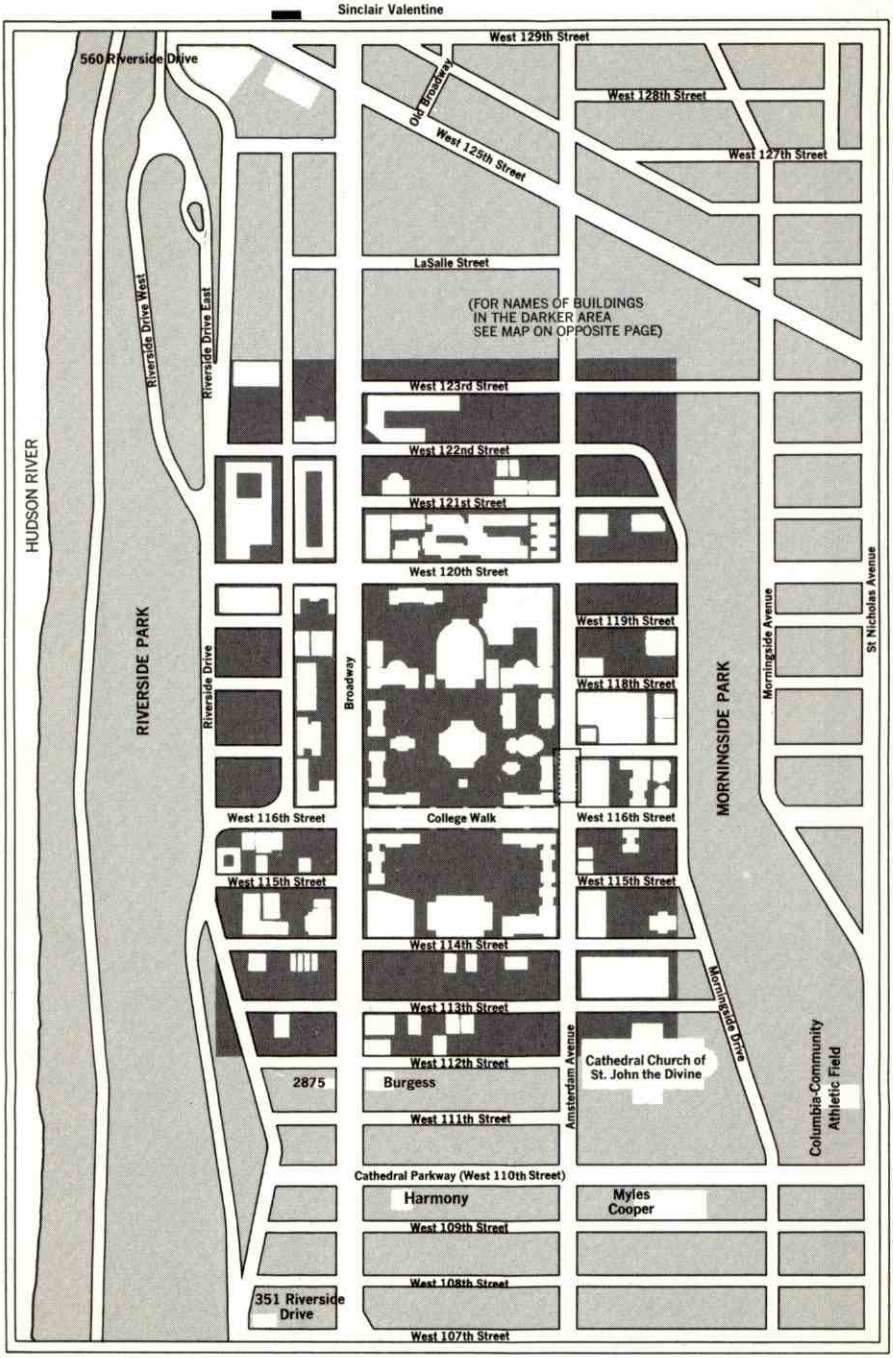
**Sept 27–29** Monday–Wednesday.* Registration, including payment of fees.

**30** Thursday. Classes begin.

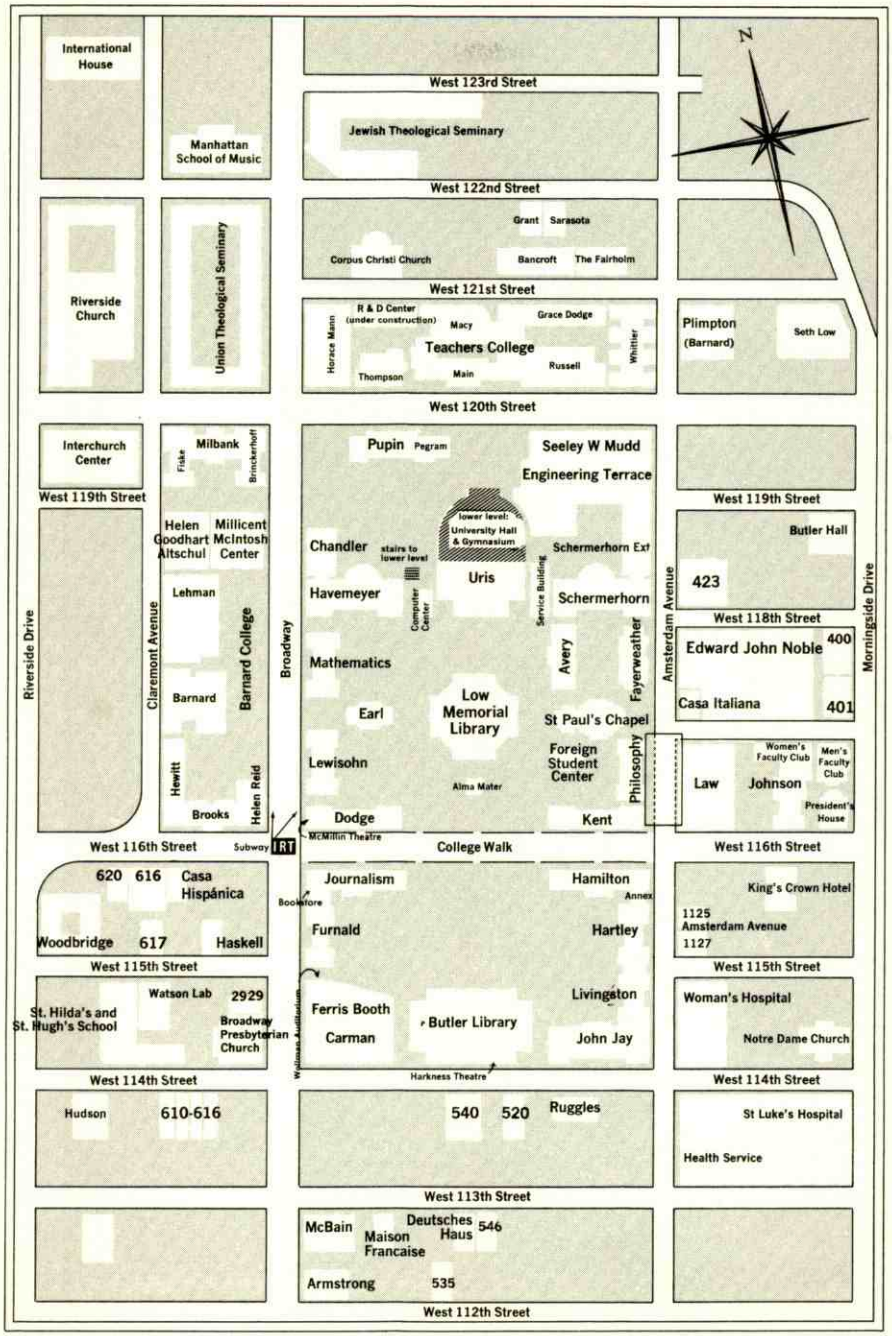
* Students who apply after this date must pay a late fee.

# The Morningside Heights Area of New York City

Sinclair Valentine



# The Morningside Campus & Environs



## To Columbia Students

THIS BULLETIN IS FOR YOUR USE AS A SOURCE OF CONTINUING REFERENCE. PLEASE SAVE IT. REPLACEMENT COPIES CAUSE EXPENDITURES WHICH SHOULD MORE DIRECTLY SERVE YOUR EDUCATION.