

**Graduate School
of Architecture,
Planning, and Preservation**

**Columbia
University
Bulletin**

1988 / 1990

Directory

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ADDRESS INQUIRIES AS FOLLOWS:

General Information, Bulletin and Application Requests: 400 Avery Hall; telephone 280-3414

Admission and Financial Aid: Office of Architecture Admissions, 400 Avery Hall; telephone 280-3510

Certifications to Government Agencies: Office of Student Information Services—Student Aid Certification, 201 Philosophy Hall; telephone 280-3243

Employment (part time): Student Employment Office, 206 Lewisohn Hall; telephone 280-2391

Health Service: Columbia University Health Service, John Jay Hall; telephone 280-2284

Housing

On campus: Residence Halls Assignments Office, 111 Wallach Hall; telephone 280-2206

Off campus: Registry of Off-Campus Accommodations, 115 Hartley Hall; telephone 280-2773; International House, 500 Riverside Drive, New York, N.Y. 10027; telephone 316-8400

International Students' Advisory Service: Office of the International Student Adviser, 208 Lewisohn Hall; telephone 280-3591

Office of Student Information Services/Payment of Fees: 210 Kent Hall; telephone 280-3728

Registration • Withdrawal Notices: Office of Student Information Services, 208 Philosophy Hall; telephone 280-2595

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Educational Purpose

The Graduate School of Architecture, Planning, and Preservation offers a series of distinctive programs within two complementary divisions, that of Architecture and that of Planning and Preservation. The educational objectives of these programs deal in different ways with one open-ended field: urban society and its future. The presence of several areas of study within a single school enables a critical understanding of the forces that affect the building of spaces and the making of cities, so as to encourage appropriate formulation of original concepts, designs, and policies.

In each degree program offered, the School aims to develop students' artistic and intellectual abilities and to provide them, as future professionals, with the information and strategies necessary to deal responsibly and inventively with the issues challenging urban society today. These issues are approached in a non-doctrinaire way so as to yield both significant theoretical proposals as well as pertinent solutions that can be effectively implemented in the contemporary city. Each program with its related studios is structured to permit faculty and students to explore a range of approaches in respective fields, while constantly aiming at social relevance and programmatic innovation.

Beyond its specific educational aims, the objectives of the School include basic research in the fields of architecture, preservation, and planning, exchange with other disciplines in the University, and the intensity of experimentation that makes the School part of broader international debates. Historically linked to the University's world-renowned Avery Library, the School takes advantage of its unique location in New York City, drawing vitality from and contributing to the unsurpassed resources available through the city's art and culture, its outstanding practitioners, scholars, and historians.

The Graduate School of Architecture, Planning, and Preservation

History

A program in architecture was first established at Columbia College in 1881, as an adjunct to the School of Mines. William R. Ware, a disciple of the first American student at the French *Ecole des Beaux-Arts*, was the director of the new four-year curriculum leading to a degree of Bachelor of Philosophy.

The first class consisted of two students and met in a former asylum. In 1902 the School of Architecture finally realized complete independence as an entity in the University organization, and in 1912, with an enrollment of 140, the School moved into its new quarters, Avery Hall, designed by McKim, Mead, and White.

In 1922 William A. Boring became the first dean of the Faculty of Architecture. He foresaw the need for a department of town planning to provide instruction in defining the economic necessities of the community and the safety, health, and other requirements of the individual, and in the devising of plans to satisfy these needs. In this he anticipated the initial offering in 1935 of courses in town planning at the School of Architecture.

The first instance of the School's direct involvement in community service occurred in 1917. When St. Luke's Hospital in New York City proposed to erect an additional building adjacent to its existing facilities, to serve as a war hospital, the School of Architecture at Columbia was requested by the hospital authorities to aid in determining the feasibility of proceeding with the project. The School submitted a group of studies, in the form of eight-day problems, of such excellence that it was designated as architect of the project. This tradition of education and public service continues to this day as the students and faculty of this school continue to participate in a wide range of architecture, planning, and technology programs for the benefit of the community of which it is a part.

In 1966 Professor James Marston Fitch founded the first program in historic preservation in the United States. In 1973, in accord with the decision of the School to offer only graduate degrees, the name of the School was changed to the Graduate School of Architecture and Planning.

The School celebrated its centennial in 1981. This was marked by the publication of *The Making of an Architect 1881-1981*, which chronicles the history of the School.

In 1986, to reflect the reorganization of the School, the name was changed to the Graduate School of Architecture, Planning, and Preservation.

Facilities and Resources

The School

The School is located in its own building, Avery Hall; in the adjacent building, Fayerweather Hall; and in the Avery extension, which connects the two. This

complex houses design studios, classrooms, lounges, exhibition galleries, a carpentry workshop, audio-visual facilities, a slide library, a photography dark-room, a 300-seat auditorium, and a 70-seat lecture hall.

Avery Library

The resources of the world's leading architectural library, the Avery Architectural and Fine Arts Library, are located in Avery Hall and the Avery extension; they are available to the students of the School. Founded by Samuel Putnam Avery in 1890 as a research collection of 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 two hundred thousand books and periodicals on architecture, urban planning, art history, historic preservation, 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 comprehensive collection of books on the contemporary architectural movement. In addition, the library has over one hundred thousand original architectural drawings, collections of prints, and rare photographic material. Avery Library also contains the most extensive periodical index in the field of architecture, now available online as well as in printed form.

The Ware Memorial Library is designed as a circulating branch of the library for the everyday use of the students. It contains more than eight thousand books on architecture and planning from the United States and Europe and is located in the Avery Library.

The Temple Hoyne Buell Center for the Study of American Architecture

The Temple Hoyne Buell Center for the Study of American Architecture, located in Buell Hall, was founded in 1982 to advance the understanding and interpretation of American architecture, landscape, and urbanism. To achieve this goal, the Buell Center has embarked on an ambitious program of fellowships and study programs designed to engage professionals, scholars, and the general public. These rich and varied programs make the Buell Center one of the world's most important focal points for the study of American architecture.

The Center for Preservation Research

The Center for Preservation Research, established in 1983 as a technical research facility of the Historic Preservation Program, offers a broad range of conservation services in the areas of historic preservation, architecture, and construction technology. The Center's principal activity is technical studies, focused on the examination and treatment of historic buildings and monuments. Among the services offered are materials identification, condition assessment, and treatment evaluation.

The Center also undertakes sponsored research in all areas of architectural conservation, including treatment studies and the history of building materials and technology. It operates a complex of laboratories in Schermerhorn Hall and utilizes the extensive collections of the Avery Architectural and Fine Arts Library.

Computing Activities

The University Center for Computing Activities, between Uris and Havemeyer halls, has available advanced digital computing equipment (at present, principally two IBM mainframes and four DEC System 20s for auxiliary and research purposes. One hundred fifty public terminals exist on campus including some in dormitories and libraries. A public access microcomputing laboratory with fifty microcomputers of various types opened in 1985. 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.

In 1986 the Graduate School of Architecture, Planning, and Preservation, through a grant from the University and the IBM Corporation, opened computer laboratories in Avery and Schermerhorn halls. The facilities contain ten IBM/PC-ATs with plotters and graphics software to develop projects in computer-assisted design and thematic maps.

New York City

The City of New York is in itself a principal resource for the student of architecture, who benefits from its endless variety of excellent examples of historic and modern buildings.

New York's institutions are another significant advantage. Alumni and faculty members of the School are in positions of major responsibility in various organizations. This has helped the School to open up unique opportunities for students. A partial list of these organizations include the Museum of Modern Art (Department of Architecture and Design), the Metropolitan Museum of Art, the South Street Seaport Museum, the Architectural League of New York, the Institute for Fine Arts (New York University), the New York City Planning Commission, the New York City Landmarks Preservation Commission, the Cooper-Hewitt Museum, the Parks Council, and the Municipal Art Society.

William F. Kinne Fellows Traveling Fellowships

The School is the beneficiary of a considerable bequest in honor of William F. Kinne Fellows that has as its purpose the enrichment of the student's education through travel. A number of fellowships for the study of architecture and related fields are awarded annually to graduating students. Applications from members of the graduating class are considered for postgraduate travel and for travel during the summer preceding the final year of study. Specific requirements and guidelines are announced during the academic year. Students apply in the spring term of each year.

The Paul Milstein Professorship of Urban Development

In 1983 Mr. and Mrs. Seymour Milstein endowed the Graduate School of Architecture, Planning, and Preservation with a professorship named in honor of their brother Paul Milstein. The Paul Milstein Professorship of Urban Development provides the opportunity to focus in depth on issues of interest by inviting senior professionals or scholars to teach for one or two terms each year in the Master of Science in Real Estate Development Program in the Division of Urban Planning and Historic Preservation. It is the intention of the professorship to encourage a deepening interest in the forces that have and will shape urban development in America.

Career Counseling and Placement

The University Office of Placement and Career Services in 306 Buell holds regular workshops on seeking employment—from preparing a résumé to interviewing for a job. Students may also, by appointment with faculty members and administrators of the School, seek advice on career opportunities and other aspects of securing employment. The alumni organizations of the two divisions of the School sponsor an annual “job fair,” at which students may attend seminars on career paths and portfolio- and résumé-making, and arrange for job interviews with firms whose representatives come to the School. In addition, there is a “job book,” located in 400 Avery, which contains listings of part-time and full-time job openings called in from recruiting employers.

Mathews Lecture Series

The Mathews Lectures began in 1935 with an endowment from Charles T. Mathews (Class of 1889). Among the lecturers who have participated in the series are:

Professor Joseph Hudnut (1935)
Professor Leopold Arnaud (1937)
Professor Talbot Hamlin (1939)
Professor Meyer Schapiro (1946)
Professor John Mundy (1965)
Professor Henry R. Hitchcock (1971)
Sir Nikolaus Pevsner (1972)

Professor Alfred K. Frazer (1974)
Professor Spiro Kostoff (1976)
Professor Vincent Scully (1977)
Professor George Collins (1979)
Professor Neil Levine (1981)
Professor Helen Searing (1983)
Professor Georges Duby (1985)

Programs and Degrees

Master of Architecture

Master of Science in Architecture and Building Design

Master of Science in Architecture and Urban Design

Master of Science in Historic Preservation

Master of Science in Real Estate Development

Master of Science in Urban Planning

Joint Degree Programs

Master of Architecture—Master of Science in Historic Preservation

Master of Architecture—Master of Science in Urban Planning

Master of Science in Urban Planning—Master of Science in Historic Preservation

Master of Science in Urban Planning—Master of Business Administration (in conjunction with Columbia Business School)

Master of Science in Urban Planning—Master of International Affairs (in conjunction with the School of International and Public Affairs)

Master of Science in Urban Planning—Juris Doctor (in conjunction with the School of Law)

Master of Science in Urban Planning—Master of Public Health (in conjunction with the School of Public Health)

Master of Science in Urban Planning—Master of Science in Social Work (in conjunction with the School of Social Work)

Faculty of Architecture, Planning, and Preservation

Michael I. Sovern, LL.B., LL.D. *President of the University*

Robert F. Goldberger, M.D. *Provost of the University*

Bernard Tschumi *Dean of the Faculty of Architecture, Planning, and Preservation*

Amy Anderson *Assistant Professor of Architecture*

B.A., Wellesley, 1973; M. Arch., Columbia, 1978; A.I.A. Medal, 1978; Rome Prize, 1980-1981. Registered architect.

Harold K. Bell *Professor of Architecture and Urban Planning*

B.B.A., College of the City of New York, 1947. H.U.D. "Operation Breakthrough" award winner. Member, Steering Committee, National Urban Planning and Design Committee; A.P.A. Urban economist, A.I.A., Regional Urban Design Assistance Teams.

Daniel M. Bluestone *Assistant Professor of Architecture and Historic Preservation*

B.A., Harvard, 1975; Ph.D., Chicago, 1984. Mrs. Giles B. Whiting Fellow in the Humanities, 1982-1983; First Ladies' Fellow, National Museum of American History, Smithsonian Institution, 1984-1985. Board member, Society for Commercial Archaeology.

Zeynep Celik *Assistant Professor of Architecture*

B.Arch., Istanbul Technical University, 1975; M.Arch., Rice, 1978; Ph.D., California (Berkeley), 1984.

Joseph Connors *Associate Professor of Art History*

B.A., Boston College, 1966; B.A., Clare College (Cambridge), 1968; M.A., Harvard, 1972; Ph.D., 1978.

Charles Downs *Assistant Professor of Urban Planning*

B.A., Michigan, 1970; M.C.P., California (Berkeley), 1974; Ph.D., 1980. Member, American Planning Association, Planners' Network.

Kenneth Frampton *Professor of Architecture; Chairman, Division of Architecture*

Dipl. Arch., Dipl. Trop., Architectural Association (London), 1956; A.R.I.B.A., 1957. Member, A.R.C.U.K. A.I.A. Honors Award for a critical contribution to architecture; U.I.A. International Prize for criticism.

Romaldo Giurgola *Ware Professor of Architecture*

Architect, Rome, 1948; M.S., Columbia, 1951. Fellow, American Institute of Architects; Italian Order of Architects. Registered architect. N.C.A.R.B. certificate. Gold Medalist, 1982, American Institute of Architects.

Sigurd Grava *Professor of Urban Planning*

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

Marta Gutman *Assistant Professor of Architecture*

B.A., Brown, 1975; M.Arch., Columbia, 1981.

Cyril M. Harris *Special Lecturer in Architecture; Professor Emeritus of Architecture and Charles Batchelor Professor Emeritus of Electrical Engineering*
 B.A., California (Los Angeles), 1938; M.A., 1940; Ph.D., Massachusetts Institute of Technology, 1945; Sc.D. (hon.), New Jersey Institute of Technology, 1981. Franklin Medal, 1977; Wallace Clement Sabine Medal, 1979; A.I.A. Medal, 1980; gold medal, Audeo Engineering Society, 1984. Gold medal, Acoustical Society of America, 1987. Member, National Academy of Engineering; National Academy of Sciences.

Klaus Herdeg *Professor of Architecture*

B.Arch., Cornell, 1963; M.Arch., Harvard, 1964. Member, Swiss Society of Architects and Engineers. Wheelwright Fellow, Harvard, 1974-75. Registered architect.

Mark A. Hewitt *Assistant Professor of Architecture and Historic Preservation*

B.A., Yale, 1975; M.Arch., Pennsylvania, 1978. Graham Foundation Fellowship, 1985; Member, Society of Architectural Historians. Registered architect.

Steven Holl *Associate Professor of Architecture*

B.Arch., Washington (Seattle), 1971. Architectural Association (London), 1976. Registered architect. N.C.A.R.B. certificate. New York State Council on the Arts Fellowship, 1979.

John M. Jeffries *Assistant Professor of Urban Planning*

B.A., Vassar, 1976; M.A., New School for Social Research, 1983; Ph.D., 1986. Brookings Institution Fellow, 1977; Urban Research Center of New York University, Research Associate, 1983-1986; Member of Joint Center for Political Studies Economic Task Force.

Kenneth T. Jackson *Professor of History*

B.A., Memphis State, 1961; M.A., Chicago, 1963; Ph.D., 1966. Fulbright Professor, 1974; Guggenheim Fellow, 1983-1984; Fellow, Society of American Historians; Mellon Professor of the Social Sciences and of History. Bancroft Prize, 1986; Francis Parkman Prize, 1986.

Edward Kaufman *Assistant Professor of Architecture and Historic Preservation*

B.A., Yale, 1974; M.A., Columbia, 1977; Ph.D., Yale, 1984.

Michael Kwartler *Associate Professor of Historic Preservation and Urban Planning; Director, Historic Preservation Program*

B.Arch., Cooper Union, 1965; Ecole des Beaux Arts, 1966; M.S., Columbia, 1986. Member, American Institute of Architects; Society of Architectural Historians. Registered architect.

William J. MacDonald *Associate Professor of Architecture*

B.Arch., Syracuse, 1979; Architectural Association (London), 1978; M.S., Columbia, 1982.

Alvaro Malo *Associate Professor of Architecture*

Diploma Architecture, Universidad de Cuenca, Ecuador, 1967; Design Diploma, Bouwcentrum, Holland, 1969; M. Arch., Pennsylvania, 1970. Fulbright Scholarship, 1969-71. University of Pennsylvania Fellowship, 1969-71. Registered architect. N.C.A.R.B. Certificate.

Peter Marcuse *Professor of Urban Planning*

B.A., Harvard, 1948; J.D., Yale, 1952; M.A., Columbia, 1963; M.U.S., Yale, 1968; Ph.D., California (Berkeley), 1972. Member, American Institute of Certified Planners; Connecticut Bar Association; National Association of Housing and Re-development Officials; Housing Committee, Community Board 9 of Manhattan.

Frank Gerard Matero *Assistant Professor of Historic Preservation; Director, Center for Preservation Research*

B.A., State University of New York (Stony Brook), 1975; M.S., Columbia, 1978. Conservation Center, the Institute of Fine Arts, New York University, 1981-1984. Associate, American Institute for Conservation.

John M. McCormick *Senior Lecturer in Architecture*

B.S., Villanova, 1956; M.S., Columbia, 1957; Eng.Sc.D., 1961. Member, American Society of Civil Engineers; Sigma XI. Registered professional engineer.

Mary McLeod *Associate Professor of Architecture*

B.A., Princeton, 1972; M.Arch., 1975; M.A., 1976; Ph.D., 1985. Social Science Research Council Fellow, France, 1977; Fulbright/Hayes, France, 1977. National Endowment for the Humanities, 1987.

Richard A. Plunz *Professor of Architecture*

B.S., Rensselaer Polytechnic Institute, 1965; B.Arch., 1966; M.Arch., 1967.

Jan Hird Pokorny *Special Lecturer in Architecture; Professor Emeritus of Architecture*

Engineer-Architect, Polytechnical University of Prague, 1938; M.S., Columbia, 1941. Fellow, American Institute of Architects; Associate, National Academy of Design. Registered architect. N.C.A.R.B. certificate.

James Stewart Polshek *Professor of Architecture*

M.Arch., Yale, 1955; B.S., Case Western Reserve, 1973. Fulbright Fellow, 1956. Fellow, American Institute of Architects. Registered architect.

Mario G. Salvadori *Special Lecturer in Architecture; James Renwick Professor Emeritus of Civil Engineering; and Professor Emeritus of 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.

Saskia Sassen *Professor of Urban Planning; Chairman, Division of Urban Planning and Historic Preservation*

Maitrise, Poitiers, 1974; Ph.D., Notre Dame, 1974. Postdoctoral Fellow, Harvard University, 1974-1975; Ford Foundation Fellowship, 1972-1973; James P. Warburg Fellow, 1974-1975; Social Science Research Council Fellowship, 1977-1978; Tinker Foundation Fellowship, 1980-1981; New York Institute for the Humanities Fellow, 1983-1985.

Richard L. Schaffer *Associate Professor of Urban Planning*

B.S., Pennsylvania, 1969; M.A., New York University, 1971; Ph.D., 1972. Charles H. Revson Fellow, Columbia, 1982. Member, American Economics Association; American Planning Association; Municipal Art Society; National Trust for Historic Preservation.

Elliott D. Sclar *Professor of Urban Planning; Director, Ph.D. Program in Urban Planning*

B.A., Hofstra, 1963; M.A., Tufts, 1966; Ph.D., 1972. Member, American Planning Association; Planning Consultant Community Board 4 of Manhattan.

Robert A. M. Stern *Professor of Architecture; Director, Temple Hoyne Buell Center for the Study of American Architecture*

B.A., Columbia, 1960; M.Arch., Yale, 1965. Fellow, American Institute of Architects. Registered architect.

Roy Strickland *Assistant Professor of Architecture; Co-Director, New York/Paris Program; Departmental Representative, Columbia College*

B.A., Columbia, 1976; M.Arch., Massachusetts Institute of Technology, 1982. Founding member, Massachusetts Institute of Technology Architecture and Planning Association. Member, Architectural League, Partners for Livable Places. Panelist, Registry for the National Endowment for the Arts. Design Arts Fellow, National Endowment for the Arts, 1980.

James. T. Tice *Associate Professor of Architecture*

B.Arch., Cornell, 1968; M.Arch., 1970. Registered architect.

Susana Torre *Associate Professor of Architecture*

Diploma Architecture, Buenos Aires, 1967. Edgar Kaufmann Foundation Scholar, 1967. New York State Council of the Arts grant, 1969. Fellow, Noble Foundation, 1970. National Endowment for the Humanities, 1987. Board of Directors, Architectural League of New York. National Endowment for the Arts Fellowship, 1979-1986.

Bernard Tschumi *Professor of Architecture; Dean of the Faculty of Architecture, Planning, and Preservation*

Dipl. Arch. E.T.H., Zürich, 1969. Arts Council of Great Britain, 1975. National Endowment For the Arts, 1979. Member, College International de Philosophie, Chevalier des Arts et des Lettres, and Legion of Honor, Paris. Registered architect.

Gwendolyn Wright *Professor of Architecture, Planning, and Preservation*

B.A., New York University, 1969; M.Arch., California (Berkeley), 1974; Ph.D., 1978. Woodrow Wilson Fellowship, 1977; Ford Foundation Fellowship, 1979-1980; National Endowment for the Humanities Fellowship, 1980-1982; Stanford Humanities Center Fellow, 1982-1983; New York Institute for the Humanities Fellow, 1983-1985.

Other Officers of Instruction

Nicholas Adams *Visiting Associate Professor of Architecture*

B.A., Cornell, 1970; M.A., New York University (Institute of Fine Arts), 1973; Ph.D., 1978.

Debra C. Allee *Adjunct Associate Professor of Urban Planning*

B.A., Radcliffe, 1959. Member, American Institute of Certified Planners.

Anthony Alofsin *Adjunct Assistant Professor of Architecture*

B.A., Harvard, 1971; M.Arch., 1981; M.Phil., Columbia, 1983. Visiting scholar, Harvard Graduate School of Design, 1985-1986; Certificate of Merit, A.I.A., Boston Chapter, 1981; member, Society of Architectural Historians; United States International Committee on Monuments and Sites.

Jan C. K. Anderson *Adjunct Assistant Professor of Historic Preservation*

B.A., Wells, 1967; M.A., Middlebury, 1968; M.S., Columbia, 1977. Founder and Executive Director, RESTORE/Restoration Skills Training. Board of Directors, National Council for Preservation Education; RESTORE. Board of Advisors, Coalition for Applied Preservation Technology, Columbia University Center for Preservation Research.

Victor Bach *Adjunct Associate Professor of Urban Planning*

B.S., Brooklyn, 1953; M.A., Yale, 1954; Ph.D., Massachusetts Institute of Technology, 1977.

Kevin Bone *Adjunct Assistant Professor of Architecture*

B.Arch., Pratt Institute, 1978. Registered architect, New York, 1983. Member, American Institute of Architects. N.C.A.R.B. Certificate. Adjunct Assistant Professor of Architecture, The Irwin S. Chanin School of Architecture at The Cooper Union, 1985-1988.

Paul Buckhurst *Adjunct Associate Professor of Urban Planning*

Dipl. Arch., Canterbury (England), 1959; M. Arch. U.D., Harvard, 1966; Dipl. in Urban Planning, London, 1968. Member, A.I.C.P.; A.R.I.B.A.

Robb Burlage *Adjunct Associate Professor of Urban Planning*

B.A., Texas, 1959; M.A., Harvard, 1962. Member, American Health Association; founder and board member, Health Policy Advising Center.

Ann L. Buttenwieser *Adjunct Associate Professor of Urban Planning*

B.A., Swarthmore, 1957; M.S., Columbia, 1977; Ph.D., 1984. Consultant, New York City Department of City Planning; Board of Managers, Swarthmore College; co-founder, The Park Council; Associate Director, New York/Paris Program.

Frances Campani *Adjunct Assistant Professor of Architecture*

B.A., State University of New York (Stony Brook), 1976; M. Arch., Columbia, 1982. Registered architect.

Michael Carapetian *Visiting Professor of Architecture*

AA Dip., Architectural Association London, 1963. Practicing architect, Los Angeles; London. Teaching, USC School of Architecture, Los Angeles.

Beatriz Colomina *Adjunct Assistant Professor of Architecture*

Titulo Arquitecto, Barcelona, 1975. Registered architect, Barcelona, 1976. Spanish Ministry of Education grant, 1980; New York Institute for the Humanities Research Fellow, 1980-1981; Caja de Ahorros de Barcelona grant, 1981; U.S.A.-Spanish Joint Committee for Educational and Cultural Affairs Fellowship, 1983-1984; Fondation Le Corbusier Grant, 1985.

William J. Conklin *Adjunct Professor of Historic Preservation*

B.A., Doane, 1944; M. Arch., Harvard, 1958. Wheelwright Fellow, Harvard, 1952; Fellow, American Institute of Architects; Vice-Chairman, New York City Landmarks Preservation Commission, 1977-1984; Research Associate, Institute of Andean Studies, Berkeley.

Peggy Deamer *Adjunct Assistant Professor of Architecture*

B.A., Oberlin, 1972; B. Arch., Cooper Union, 1977; M.A., Princeton, 1983.

Elizabeth Diller *Adjunct Assistant Professor of Architecture*

B. Arch., Cooper Union, 1979. Fellowships: Graham Foundation, New York Foundation for the Arts, American Academy in Rome, and NIAE.

Livio Dimitriu *Adjunct Associate Professor of Architecture*

B. Arch., Cooper Union, 1976. Institute for Architecture Ion Mincu, Fellowship in History of the Modern Movement, Bucharest, Romania, 1975 and 1976.

Andrew Dolkart *Adjunct Assistant Professor of Historic Preservation*

B.A., Colgate, 1973; M.S., Columbia, 1977. Member, Society of Architectural Historians; Preservation League of New York State.

Stanton Eckstut *Adjunct Professor of Architecture; Director, Urban Design Program*

B. Arch. Eng., Pennsylvania State, 1965; M. Arch., Pennsylvania, 1968. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate.

Deane M. Evans, Jr. *Adjunct Assistant Professor of Architecture*

B.A., Yale, 1972; M. Arch., Columbia, 1977. Registered architect, New York.

Dennis Ferris *Adjunct Assistant Professor of Urban Planning*

B.A., Michigan, 1970; M. Arch., 1980; M.S. Urban Planning, Columbia, 1985.

Irving Fischer *Adjunct Associate Professor of Urban Planning*

B.S., Purdue; M.B.A., New York University; Chief Executive Officer, HRH Construction Corp.; Gulf and Western Board Member; member of the board of the Holocaust Commission; National Black Theater.

Erika Franke *Adjunct Assistant Professor of Architecture and Historic Preservation*

B.A., Vassar, 1971; B.A., Massachusetts Institute of Technology, 1977; M.Arch., 1979.

Meyer S. Frucher *Adjunct Associate Professor of Urban Planning*

B.S., Columbia, 1972; M.P.A., Harvard, 1974. Director, Governor's Office of Employee Relations, State of New York; President and Chief Executive Officer, Battery Park City Authority.

James Gainfort *Adjunct Assistant Professor of Architecture*

B.A., Dartmouth, 1969; B.Arch., Pratt Institute, 1979. Member, A.I.A.; C.S.I. Registered architect.

James Garrison *Adjunct Assistant Professor of Architecture*

B.Arch., Syracuse, 1977. Registered architect.

Martin E. Gold *Adjunct Associate Professor of Urban Planning*

B.A., Cornell, 1967; J.D., Harvard, 1970; M.P.A., Harvard, 1971. Partner, law firm of Brown & Wood; Fellow, Center of Law and Development, (Sri Lanka), 1971-73; NYC Law Department, Director of Corporate Law, 1980-85; Member, Real Property, Energy and Environmental Law Committees of the Bar Association of the City of New York.

Stephen Gottlieb *Adjunct Assistant Professor of Historic Preservation*

B.Arch., Cornell, 1969. Chair, AIA Historic Buildings Committee, NYC, 1983-1986. Victorian Society of America, Board Member, Metropolitan NY Chapter, 1985-present. Fine Arts Federation of New York, Director, 1987. ICOMOS. APT. NCARB Registered architect NY, NJ, PA, DEL, MD.

Frances Halsband *Adjunct Professor of Historic Preservation*

B.A., Swarthmore, 1965; M.Arch., Columbia, 1968. Commissioner, New York City Landmarks Preservation Commission, 1984-87; President, Architectural League of New York; Fellow, American Institute of Architects; Registered architect.

Thomas Hanrahan *Adjunct Assistant Professor of Architecture*

B.S., Illinois, 1978; M.Arch., Harvard, 1982. Wheelwright Fellow, Harvard, 1985-1986. Registered architect.

Dennis Hector *Adjunct Assistant Professor of Architecture*

B.Arch., 1976, Cornell. Registered architect.

A. Jay Hibbs *Adjunct Assistant Professor of Architecture*

B.Arch., Cooper Union, 1980; Registered architect.

Paola Iacucci *Adjunct Assistant Professor of Architecture*

Doctorate, Architecture and Planning, University of Rome, School of Architecture, 1967. Registered architect, 1967; Architect Association, 1971, Rome; 1976, Milan.

John A. James *Adjunct Associate Professor of Architecture*

B.S., College of the City of New York, 1960; M.Arch., Harvard, 1971.

Anna Kalla *Adjunct Assistant Professor of Architecture*

B.S., Carnegie-Mellon, 1976; M.Arch., Columbia, 1980. A.I.A. Medal, 1980. Registered architect.

Panos Koulermos *Visiting Professor of Architecture*

Dipl. Arch. (London), 1957, and Urbanism (Milan), 1964, ARCUK, RIBA, 1959. N.C.A.R.B. Certificate, AIA, 1979. Registered architect, Greece. Distinguished Achievement Award in teaching, research, and practice. Los Angeles chapter AIA, 1985.

Kunio Kudo *Adjunct Associate Professor of Architecture*

M.A.U.D., Harvard, 1978; Dr.Eng. in Arch., 1969; M.Eng. in Arch., 1965; B.Eng. in Arch., 1963; Tokyo Institute of Technology; Regional Science Research Fellow, Pennsylvania, 1969-71; American Study Fellow, Brown, 1977-78; Associate Professor of Architecture, Nagoya Institute of Technology, 1972-81; Visiting Professor, Nova Scotia Technical College, Canada, 1980; Japanese registered architect.

Alessandra Latour *Adjunct Associate Professor of Architecture*

M.S., Architecture and Urban Design, Columbia, 1975; Architecture and Planning Laurea, Rome, 1971. ANCE grant, 1987; Graham Foundation grant, 1986; Curator of AIA chapter gallery, New York; editorial staff, *Eupalino*.

Charles S. Laven *Adjunct Associate Professor of Urban Planning; Director, Real Estate Development Program*

B.S., Massachusetts Institute of Technology, 1973. Loeb Fellow, Harvard, 1981.

Nellie Longsworth *Adjunct Associate Professor of Historic Preservation*

B.A., Smith, 1955. LL.D.(hon.), Goucher, 1983. President, Preservation Action.

Robert McCarter *Adjunct Assistant Professor of Architecture; Assistant to the Chairman, Division of Architecture*

B.E.D. in Arch., North Carolina State, 1977; M. Arch., Columbia University, 1985. SOM Foundation Fellowship, 1983-84. Registered architect.

Robert Marino *Adjunct Assistant Professor of Architecture*

B.E., Stevens Institute of Technology, 1971; M. Arch., Princeton, 1982. Registered professional engineer, New Jersey. Registered architect, New Jersey and New York.

Michael Mein *Adjunct Assistant Professor of Architecture*

“La Cambre”; Brussels, 1978; “School for the Reconstruction of the City,” Brussels, 1979; Registered architect, Brussels, 1980; Massachusetts Institute of Technology, 1980-1982; I.L.A.U.D. Grant, 1981.

Paul S. Naecker *Adjunct Assistant Professor of Architecture*

Certificate and B. Arch., Boston Architectural Center, 1977. Travelling Fellowship, American Academy in Rome, 1977. Member, The William Morris Society; Registered architect, New York, Massachusetts, and California. N.C.A.R.B. certificate.

Benjamin B. G. Nistal-Moret *Adjunct Assistant Professor of Historic Preservation*

B.A., Puerto Rico, 1967; M.A., Maryland, 1969; Ph.D., State University of New York, 1978; M.S. in Historic Preservation, Columbia, 1982; Certificate, Institute of Advanced Architectural Studies, University of York (England), 1985. Architecture Conservator, National Park Service. Landmarks Preservationist, New York City Landmarks Preservation Commission. Member: International Institute of Conservation, International Council on Monuments and Sites (U.S.), Association for Preservation Technology, Society of Architectural Historians. Grants: Kress Foundation, Smithsonian Institution.

Guy J. P. Nordenson *Adjunct Assistant Professor of Architecture*

B.S.C.E., Massachusetts Institute of Technology, 1977; M.S., California (Berkeley), 1978. Member, American Society of Civil Engineers; Civil Works Register; Architectural League of New York; Earthquake Engineering Research Institute; N.Y. Academy of Sciences; Structural Engineers Association of California.

Joan Ockman *Adjunct Assistant Professor of Architecture*

B.A., Radcliffe, 1974; B.Arch., Cooper Union, 1980. Fellow, Institute for Architecture and Urban Studies, 1981-1982.

Suzanne O'Keefe *Adjunct Assistant Professor of Urban Planning*

B.A., New York University, 1968; M.Arch., Columbia, 1972. Progressive Architecture Award, 1974, Office of Lower Manhattan Development; National Endowment for the Arts Design Project Fellowship, 1979; Charles H. Revson Fellow, Columbia, 1984-1985. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate.

Randall Ott *Adjunct Assistant Professor of Architecture*

B.S., Michigan, 1980; M.Arch., Yale, 1984. William Muschenheim Fellow, 1984-1985. Member, American Institute of Architects. Registered architect.

William T. Parker, Jr. *Adjunct Associate Professor of Urban Planning*

B.S., Cincinnati, 1970; M.S., Columbia, 1976. Member, American Institute of Architects. Registered architect. N.C.A.R.B. certificate. Director, Center for Health Facilities Research, Trenton, New Jersey.

Anne Elizabeth Perl *Adjunct Assistant Professor of Architecture*

B.A., North Carolina State, 1980; M.Arch., Columbia, 1986. AIA National Medal, New York City Chapter, 1986. Member, American Institute of Architects.

Charles Platt *Adjunct Professor of Historic Preservation*

B.A., Harvard, 1954; M.Arch., 1960. Member, American Institute of Architects. Commissioner, New York City Landmarks Preservation Commission, 1979-1984. Registered architect. N.C.A.R.B. certificate.

Theodore H. M. Prudon *Adjunct Associate Professor of Historic Preservation*

M.A., Delft University of Technology, 1969; M.S., Columbia, 1972; Ph.D., 1980. William F. Kinne Fellows Traveling Fellow, 1972. Member, Royal Dutch Society of Architects.

Nicholas Quennell *Adjunct Associate Professor of Architecture*

Dipl.Arch., Architectural Association (London), 1957; M.L.A., Harvard, 1969. Member, American Society of Landscape Architects; Royal Institute of British Architects; Architectural Association (London). Registered architect, New York, New Jersey, Pennsylvania, the United Kingdom. Registered landscape architect, New York, Massachusetts, Connecticut. N.C.A.R.B. certificate. C.L.A.R.B. certificate.

Eugene A. Santomasso *Adjunct Assistant Professor of Architecture*

B.A., Yale, 1960; M.A., Columbia, 1965; Ph.D., 1973.

Paul D. Selver *Adjunct Associate Professor of Urban Planning*

B.A., Harvard, 1969; J.D., 1972. Board of Directors, Manhattan Bowery Corporation; Editorial Board, *Metropolis Magazine*; partner, Tufo and Zuccotti. Member, Bar Association of the City of New York.

Luis Sierra *Adjunct Assistant Professor of Urban Planning*

B.Env.Design, North Carolina State, 1974; M.S., Columbia, 1979; Ph.D., 1983.

Robert Silman *Adjunct Professor of Architecture*

B.A., Cornell, 1956; B.C.E., New York University, 1960; M.C.E., 1963. Fellow, Institute for Architecture and Urban Studies; Vice President, Architectural League of New York. Fellow, American Society of Civil Engineers. Professional engineer.

Joel M. Silverman *Adjunct Associate Professor of Urban Planning*

B.E. (E.E.), City College of New York, 1971; P.E. (N.Y.), 1976. Member, Institute of Electrical and Electronics Engineers; New York State Society of Professional Engineers. Executive Vice President, HRH Construction Corporation.

Julie L. Sloan *Adjunct Assistant Professor of Historic Preservation*

B.A., New York University, 1980; M.S., Columbia, 1982. Member, American Technical Committee, Corpus Vitrearum.

A. Eugene Sparling *Adjunct Assistant Professor of Architecture*

B.A., Washington (Seattle), 1977; M.Arch., Columbia, 1980.

Meredith H. Sykes *Adjunct Associate Professor of Historic Preservation, Co-Director, New York/Paris Program*

B.A., New York University, 1962; M.A., Columbia, 1964. Director, Urban Cultural Resources Survey, New York City Landmarks Preservation Commission.

Christos Tountas *Adjunct Associate Professor of Architecture*

B.A., Harvard, 1968; M.S., Columbia, 1971; M.Phil., 1976.

Karen Van Lengen *Adjunct Assistant Professor of Architecture*

B.A., Vassar, 1973; B.Arch., Columbia, 1976. Associate, I.M. Pei & Partners, 1981. Fulbright Fellow, Rome, Italy, 1982-1983. Partner, Heisel/Van Lengen Architects, 1986. Registered architect, New York; Florida. N.C.A.R.B. Member, American Institute of Architects.

Lauretta Vinciarelli *Adjunct Associate Professor of Architecture*

Arch., Urban Planning doctorate, Rome, 1970. Member, Italian Institute of Architects. Registered architect.

Rafael Vinoly *Adjunct Professor of Architecture*

Architect, U.B.A., 1969. Registered architect, CPA. A.I.A.

Christine Wade *Adjunct Assistant Professor of Urban Planning*

B.A., Bard, 1974. Computer applications consultant.

Robert F. Wagner, Jr. *Adjunct Professor of Urban Planning*

B.A., Harvard, 1965; D.Phil., Sussex, 1967; M.P.A. Princeton, 1969. Chairman, City Planning Commission, City of New York; Deputy Mayor for Policy, City of New York; Chairman of the Board of Directors, Health and Hospitals Corporation; Board of Directors, Metropolitan Transportation Authority; Chairman, Mayor's Commission on the Year 2000.

Martin Weaver *Adjunct Associate Professor of Historic Preservation*

Dipl., Architectural Association (London), 1969. Member, Royal Institute of British Architects. Director, Education and Technical Services, Heritage Canada.

Michael Webb *Adjunct Assistant Professor of Architecture*

Poly Diploma, Polytechnic of Central London, 1972.

Anthony C. Webster *Adjunct Assistant Professor of Architecture*

B.S. Eng., Summa Cum Laude, Rutgers, 1980; M.S. Structural Eng., Columbia, 1984; C.E. Structural Eng., Columbia, 1987.

Norman R. Weiss *Adjunct Associate Professor of Historic Preservation*

B.A., New York University, 1968. President, Center for Building Conservation. Senior lecturer, RESTORE. Fellow, American Institute for Conservation. Life member, Association for Preservation Technology.

Harry Charles Wolf *Adjunct Professor of Architecture*

B.S., Georgia Tech., 1958; B.Arch., Massachusetts Institute of Technology, 1960. Fellow, American Institute of Architects.

Leonardo Zylberberg *Adjunct Assistant Professor of Architecture*

Arquitecto, Buenos Aires, 1973; M.S., Arch. and Urban Design, Columbia, 1979. Registered architect, New York.

Emeriti and Retired Officers

James Marston Fitch *Professor Emeritus of Architecture*
 Percival Goodman *Professor Emeritus of Architecture*
 Cyril Harris *Professor Emeritus of Architecture and Electrical Engineering*
 Edgar Kaufmann, Jr. *Professor Emeritus of Architecture*
 Alexander Kouzmanoff *Professor Emeritus of Architecture*
 Jan Hird Pokorny *Professor Emeritus of Architecture*
 Charles J. Rieger *Professor of Architecture, Retired*
 Theodor K. Rohdenburg *Professor Emeritus of Architecture*
 Mario G. Salvadori *James Renwick Professor Emeritus of Civil Engineering and Architecture*
 Kenneth A. Smith *Professor Emeritus of Architecture; Dean Emeritus of the Faculty of Architecture*

Administrative Officers and Staff

Bernard Tschumi *Dean of the Faculty of Architecture, Planning, and Preservation*
 Loes Schiller *Associate Dean for Admissions, Financial Aid, and Student Affairs*
 Kenneth Frampton *Chairman of the Division of Architecture*
 Saskia Sassen *Chairman of the Division of Urban Planning and Historic Preservation*
 Ann Ffolliott *Assistant Director for Administration, Temple Hoyne Buell Center for the Study of American Architecture*
 Kathleen Scullion *Director of Alumni Relations and Development*
 Barbara Jones *Business Manager*
 David Hinkle *Executive Assistant to the Dean*
 Marcia Winter *Student Affairs Officer*
 Robin Barratt *Administrative Assistant, Architecture Division*
 Verona Wint *Administrative Assistant, Urban Planning and Real Estate*
 Shirley Driks *Administrative Assistant, Historic Preservation*
 Elizabeth Gerstein *Administrative Assistant, Temple Hoyne Buell Center for the Study of American Architecture*
 Christine Heenan *Receptionist*
 Avery Library
 Angela Giral *Avery Librarian*
 William P. O'Malley *Architecture Bibliographer*

Herbert Mitchell *Avery Bibliographer*
Kathe Chipman *Head, Access and Support Services*
Katherine Chibnik *Planning Bibliographer*
Janet Parks *Curator of Drawings and Archives*
Edward Goodman *General Editor, Avery Index*
Paula Gabbard *Indexer, Reference Librarian*
Deborah Kemp *Indexer, Reference Librarian*
Barbara Sykes-Austin *Indexer, Reference Librarian*
Janice Woo *Indexer, Reference Librarian*

Division of Architecture

CHAIRMAN: Mr. Kenneth Frampton

The Division of Architecture offers three programs of study:

—The Master of Architecture, a three-year first professional degree program, endeavors to stress the importance and interrelationship of architectural design principles and historic and contemporary issues in an evolving culture.

—The Master of Science Degree in Architecture and Building Design, a one-year program intended to serve students who have a previous professional degree and some professional experience, offers an opportunity to develop the design of a single complex building to a much higher level of resolution than is normally achieved in graduate schools.

—The Master of Science Degree in Architecture and Urban Design, a one-year program intended to serve students who have a previous professional degree and some professional experience, uses New York City as a focus for the exploration of architecture generated in response to an evolving urban context.

Each of the three programs is organized independently with separate studios and admissions criteria. However, the faculty members and courses of the division are in most cases shared by the three programs.

Being part of a great university located in a major metropolis has determined much of what is unique about the Division of Architecture. The School is not only able to attract excellent faculty members, but it is also able to draw upon the large and diverse community of architects—theorists, practitioners, scholars—in New York. Thus the division is able to expose student architects to architecture as a complex cultural endeavor, about which there can be many attitudes.

At the same time that it explores the richness of architectural culture, the division seeks to provide an orderly system for integrating the various aspects of architectural study. Therefore, the curriculum is broadly divided into the study of history and theory, technology, methods and practice, and visual studies and design. Learning about architecture involves, on the one hand, examining those historical, social, cultural, technical, and economic forces that shape buildings; on the other hand, it means mastering these forces with means traditionally available to the architect. The design studio is the main focus of the curriculum in that it offers the opportunity to integrate and synthesize what is being studied.

In general, the division seeks to impart basic principles and knowledge, to develop visual and analytical skills, and to relate creativity to given cultural situations. It is hoped that architects, thus trained, will be able to use their knowledge and insight by responding to and improving the built environment.

Master of Architecture Degree

The Three-Year M. Arch. Curriculum

The Master of Architecture Program attempts to distinguish itself from similar programs elsewhere by stressing the importance of developing an understanding of, and

an ability to apply architectural principles in relation to broader historic and contemporary issues in a changing culture. The objective of the program is to assist the student in developing a theoretical basis for decision making in design, while maintaining intense exposure to a broad spectrum of philosophical attitudes. The Faculty believes that a variety of pedagogical approaches delivered within clearly defined objectives best suits the needs of the heterogeneous graduate student population.

The program comprises four major components, together forming the educational matrix that is the core of the Columbia experience:

1. A student body with graduate-level interests in the profession of architecture and with diverse backgrounds in many areas of intellectual endeavor, all contributing to the richness of the program.
2. A faculty of experienced teachers, both practitioners and researchers, all of whom are expected to relate their extracurricular work to their teaching responsibilities.
3. A program of study consisting of lectures, seminars, and studios, whose objectives are definable but whose form is malleable—programs that respond to changing student attitudes and evolving societal needs.
4. A setting of the most effective physical facilities, including classrooms, studios, auditoriums, shops, and libraries. In addition, the cultural milieu of New York City is an ever-present advantage that gives the program its unique qualities.

The focus of the entire program is the Comprehensive Design Studio. It is a carefully structured three-year course of study that prepares the student for roles related to the design of buildings and other environmental artifacts. This design activity is augmented by five other areas of study. The History/Theory Sequence broadens the student's perceptions of his or her design activity, through conceptual analysis of the cultural role of design activity in general. The Technology Sequence and Methods/Practice Sequence prepare the student to understand the structural, constructional, and management consequences of design decisions. The Visual Studies Sequence provides specialized investigation that complements the normal studio work. The Elective Sequence, which permits the student to pursue individual interests in architectural and environmental topics, may become the basis for pursuing advanced study in specialized areas beyond the M.Arch. degree.

Summary of the Master of Architecture Program

To graduate with a Master of Architecture degree, a student is required to complete 108 graduate-level course points that are approved by the Graduate School of Architecture, Planning, and Preservation. These course points are a combination of required courses, a certain number of points of distribution course requirements, and elective course points. The courses are divided into the following categories: Studio (S), History/Theory (H/T), Technology (T), Visual Studies (VS), Methods/Practice (M/P), and Elective. Each category (except

Elective) has requirements that must be fulfilled. The School reserves the right to institute changes in the curriculum before the expiration date of this bulletin.

1. STUDIO COURSE SEQUENCE(S)

A. S Prerequisite for Entry into M.Arch. Program

A 3-point course in architectural representation offered by the Graduate School of Architecture, Planning, and Preservation for entering students with a deficiency in graphic ability. The following course offered in the Summer Session fulfills the requirement:

Architecture S1020R Architectural representation: introduction
3 pts

B. S Requirements for M.Arch. Program

Six sequential studios starting in autumn term, first year:

A4001	Comprehensive studio I	7 pts
A4002	Comprehensive studio II	7 pts
A4003	Comprehensive studio III	7 pts
A4004	Comprehensive studio IV	7 pts
A4005	Comprehensive studio V	7 pts
A4006	Comprehensive studio VI	7 pts

Total: 42 pts

C. S Distributional Requirements for M.Arch. Program

None

II. HISTORY/THEORY COURSE SEQUENCE (H/T)

A. H/T Prerequisite for Entry into M.Arch. Program

Any 3-point survey course in the history of architecture but with strong recommendation for a course in either the evolution of classical architecture from the Renaissance to the modern period or modern architecture.

The following course is offered in the Summer Session:

S3320 Issues in Architecture Theory and History 3 pts

B. H/T Requirements for M. Arch. Program

Three sequential H/T courses:

A4348	Thresholds in the history of Western architecture I	3 pts
A4349	Thresholds in the history of Western architecture II	3 pts
A4400	Formal principles of architectural design	3 pts

Total: 9 pts

C. H/T Distributional Requirements for M.Arch. Program

Four H/T courses Total: 12 pts

The four courses must be chosen from four or five categories: Pre-1800, Modern (Post-1800), Urban, American, and Non-Western. In the course schedule each term those courses that fulfill the distri-

butional requirement will be identified. Below is a list of H/T courses offered in the past; most of them are expected to be offered on a one- or two-year rotating basis.

A4300	Classicism and anti-classicism: From Raumplan to Plan Libre	3 pts
A4307	Contemporary architecture in Non-Western contexts	3 pts
A4330	Urban history I	3 pts
A4331	Urban history II	3 pts
A4341	American architecture: 1876–1976	3 pts
A4344	Traditional Japanese architecture	3 pts
A4351	Formal structure in Central Asian architecture	3 pts
A4353	Le Corbusier	3 pts
A4355	The architecture of Frank Lloyd Wright: critical analysis	3 pts
A4358	Renaissance architecture and urbanism	3 pts
A4364	Building types: the transformation of institutional form	3 pts
A4366	Historical evolution of housing in New York City	3 pts
A4370	Italian rationalism	3 pts
A4371	Paris: the evolution of urban form	3 pts
A4372	Skyscrapers: art, technology, and commerce	3 pts
A4374	Contemporary theory and criticism of architecture	3 pts
A4377	London, metropolis of the 19th century: architecture and urban development	3 pts
A4378	History and theory of architectural preservation in Europe: 1780–1900	3 pts
A4381	Architecture and the printed media	3 pts
A4383	German modern movement, 1918–1933	3 pts
A4386	Modernity, thought, and culture: parallel readings	3 pts
A4387	English architecture: 1830–1930	3 pts
A4395	Modern architecture and critical form: 1935–1985	3 pts
A4409	Theories of architecture: 1700–1900	3 pts
A4410	Design attitudes in European and American urbanism: 1750–1930	3 pts
A4420	Comparative critical analysis of built form	3 pts
A4435	English architecture: 1530–1830	3 pts
A4445	The Palazzo: a regional typology: 1400–1800	3 pts
A4450	Scandinavian modern movement: Utzon and Aalto	3 pts
A4480	Elements of landscape architecture	3 pts
A4547	Case studies in urban design	3 pts
A4565	Studies in architectural representation	3 pts

A4573	The Islamic city	3 pts
A4755	The architecture of Louis I. Kahn: critical analysis	3 pts

H/T Distributional requirements may also be fulfilled with graduate courses (4000 level and above) in the Art History Department. Students should check the *Schedule of Classes*, issued by the Office of Student Information Services each term, for courses that are open to them.

III. TECHNOLOGY COURSE SEQUENCE (T)

A. T Requirements for M.Arch. Program

Seven sequential T-required courses:

A4111	Statics and strength of structures	3 pts
A4123	Steel and timber technology	3 pts
A4125	Reinforced concrete technology	3 pts
A4220	Architecture and technology I	3 pts
A4221	Architecture and technology II	3 pts
A4610	Architecture and technology III	3 pts
A4611	Architecture and technology IV	3 pts

Total: 21 pts

B. T Distributional Requirements for M.Arch. Program

Two T courses out of four offered: Total: 6 pts (minimum)

A4619	Introduction to mechanical systems	3 pts
A4626	Architectural detailing	3 pts
A4628	Architectural acoustics	3 pts
A4637	Lighting and buildings	3 pts
A6134	Architectural consequences of structural decisions	3 pts

IV. VISUAL STUDIES COURSE SEQUENCE (VS)

VS Requirements for M.Arch. Program

One of two courses offered:

A4509	Architectural drawing: projection and proportion	3 pts
A4503	Freehand drawing and analysis	3 pts

V. METHODS/PRACTICE COURSE SEQUENCE (M/P)

M/P Distributional Requirements for M.Arch. Program

One M/P course out of five offered:

A4530	Computer concepts for the built environment	3 pts
A4531	Computer applications for the built environment	3 pts

A4535	Computer-aided design in architecture and preservation	3 pts
A4536	Development and finance	3 pts
A4560	Professional practice	3 pts

VI. ELECTIVES

In addition to those courses listed above in categories II-IV, any of which may be taken as an elective, the following courses offered by the Division of Urban Planning and Historic Preservation when taken as electives may be applied toward completion of the M.Arch. degree:

A. Division of Architecture

History/Theory

A4380	Architectural field study	3 pts
A6900-A6901	Research I or II	2 or 3 pts
A8790	Research problems	2 or 3 pts

Methods/Practice

A4535	Computer-aided design in architecture and preservation	3 pts
A4539	Advanced development and finance	3 pts

B. Division of Urban Planning and Historic Preservation

PI A4112	Physical structure of cities	3 pts
PI A4304	Introduction to housing	3 pts
PI A4312	Real estate finance I: capital markets	3 pts
PI A6001	Theory and practice of urban planning	3 pts
A6310	History of landscape architecture	3 pts
A6734	Classical language and literature of architecture	3 pts
A6754	Special problems in preservation practice	3 pts
A6759	Politics of preservation	3 pts
A6760	History of North American building technology	3 pts
A6761	Conservation seminar: masonry	3 pts
A6762	Building pathology	3 pts
A6763	Advanced conservation science	3 pts
A6764	Conservation science	3 pts
A6767	Preservation planning	3 pts
A6770	Issues of urban preservation	3 pts
A6780	Preservation trade techniques	3 pts

C. Electives in Other Schools and Departments

Students may choose courses from other schools and departments of the University for M.Arch. elective credit. Students should see the Division Handbook for the regulations and procedures.

VII. SUMMER COURSES

A. Summer Programs Abroad

The School offers summer programs abroad that can be taken for elective credit. These programs are open to Columbia students and others registered in professional programs. They generally involve lectures, seminars, tutorials, and tours and are held for five weeks during June and July.

B. Summer Session Courses

For architecture-related courses offered at Columbia during the summer, consult the Summer Session bulletin.

Students enrolled in the M. Arch. Program may count only those elective courses toward the M. Arch. degree that are considered to be directly related to architectural theory and practice. All courses that have not been preapproved for elective credit may be credited only with permission of the chairperson. Undergraduate-level courses are credited only with sufficient evidence that the subject matter was unavailable to the student as a graduate course.

After full-time matriculation into the M. Arch. Program, a student may credit no more than 6 points toward his or her degree from courses being taken simultaneously at institutions other than Columbia University. Exceptions are granted by the chairperson only through petition for a leave of absence. M. Arch. degree candidates must be matriculated in the program for at least two years (72 points). A maximum of two research courses may be taken toward the M. Arch. degree.

Example of Three-Year M. Arch. Curriculum

First Year

AUTUMN TERM		Points
A4001	Comprehensive studio I	7
A4220	Architecture and technology I	3
A4348	Thresholds in the history of Western architecture I	3
A4400	Formal principles of architectural design	3
A4509	Architectural drawing	3
		19

SPRING TERM		Points
A4002	Comprehensive studio II	7
A4111	Statics and strengths of structures	3
A4221	Architecture and technology II	3
A4349	Thresholds in the history of Western architecture II	3
	Elective	3
		19

Year Total: 38

Second Year

AUTUMN TERM		<i>Points</i>
A4003	Comprehensive studio III	7
A4125	Reinforced concrete technology	3
A4610	Architecture and technology III	3
	History/Theory distribution requirement	3
	Elective	3
		<hr/> 19

SPRING TERM		<i>Points</i>
A4004	Comprehensive studio IV	7
A4123	Steel and timber technology	3
A4611	Architecture and technology IV	3
	History/Theory distribution requirement	3
	Elective	3
		<hr/> 19

Year Total: 38

Third Year

AUTUMN TERM		<i>Points</i>
A4005	Comprehensive studio V	7
	Technology distribution requirement	3
	History/Theory distribution requirement	3
	Elective	3
		<hr/> 16

SPRING TERM		<i>Points</i>
A4006	Comprehensive studio VI	7
	Technology distribution requirement	3
	Methods/Practice distribution requirement	3
	History/Theory distribution requirement	3
		<hr/> 16

Year Total: 32

Total for M.Arch. Degree: 108 minimum

Master of Science Degree in Architecture and Building Design

ACTING DIRECTOR: Mr. Kenneth Frampton

Objectives and Content of the Program

The M.S. Degree in Architecture and Building Design Program is a one-year program carried out under the supervision and instruction of the director with either selected Graduate School of Architecture, Planning, and Preservation faculty members or a visiting professor and practicing architect of international stature.

The objective of the program is to provide outstanding young professionals who hold B.Arch. or M.Arch. degrees the opportunity to enter into an intensive postgraduate study of architectural design and discourse that simultaneously enhances their architectural abilities and encourages critical thought. The intention of the program may be articulated as follows:

1. To engage the mind in a complex (yet circumstantially selective) definition of the building design possibility: from the discussion of the program, as ordered intention, to the elaboration of design, as the gathered presence of that possibility.
2. To engage the hand (and its surrogates), in the "touching" and skillful production of the objects—drawings, models, et cetera—which may give the subject of architecture tangible, visible, and measured presence.
3. To engage the eye in the act of vision, both internal and external (introspective and stereoscopic), in the aesthetic transformation of the work, which may, in the objects so produced, bring about the coalescence between intention and extension, between architecture and building.

This is accomplished through taking the design of a single complex building to a much higher degree of resolution than is normally achieved in graduate schools.

In addition, the research and design work produced in the studios draws to a large extent on the unique possibility of observing New York City as a "design laboratory."

The Organization of the Program

The program is viewed as a framework in which both academic and professional concerns are explored. The projects offered in the studios are of a scale such that both urban and architectural issues are addressed.

The centerpiece of the program is the design studio. During the year a studio topic is introduced that runs through the two terms of the program. The design studio of 9 points is required. Also required is the advanced theory seminar given by Professor Kenneth Frampton which enables students to become familiar with contemporary trends in architectural theory and practice that provide a theoretical grounding for current architectural practice. In addition, two other electives (one per term) must be taken from the list of School course offerings designated

as appropriate by the Director. There are also two additional electives, one per term, that each student chooses from other University departments or from other courses at the School.

Admissions Criteria

A Bachelor of Architecture or a Master of Architecture degree is required.

Program Requirements (36 points)

Autumn Term

A6854	Building design studio I and Studio seminar course	9 pts
A6864	Advanced theory seminar I	3 pts
	Limited elective course (1)*	3 pts
	Open elective course (1)	3 pts
		<hr/> 18 pts

Spring Term

A6855	Building design studio II and Studio seminar course	9 pts
A6865	Advanced theory seminar II	3 pts
	Limited elective course (1)*	3 pts
	Open elective course (1)	3 pts
		<hr/> 18 pts

*The limited elective courses (see above) are selected from current offerings and are recommended for M.S. degree in architecture and building design students on a semester basis.

Master of Science Degree in Architecture and Urban Design

DIRECTOR: Mr. Stanton Eckstut

The Program

The Urban Design Program is a one-year program offering a Master of Science degree in architecture and urban design. The goal of the program is that architects again become active and effective participants in designing cities. The architect is introduced to a variety of scales beyond the individual building and to new disciplines and interests, providing mechanisms to carry out design proposals with the broadest support. The University has many objectives in offering this program. They include the development and elaboration of a consistent set of proposals and guidelines for the practice of urban design, the formulation of a core of urban design professionals for both public and private sectors, and the rediscovery, as well as the redefinition, of the historical attitudes and skills of architects in designing cities.

Policy Statement

It is not necessary to consider urban design as a profession distinct from architecture. It is, however, necessary to define it according to the following policy statement:

1. The scope of urban design is any action that shapes the physical forms of cities. That action may be the designing of a building, a piece of legislation, or a budget allocation.
2. The purpose of urban design is to maximize public benefits and minimize the adverse impacts imposed by those benefits.
3. The commitment of urban design is to a "sense of place." In addition to the physical character, place is determined by the operating social, economic, political, and natural systems.
4. The process of urban design is comprehensive. It requires the inclusion of relatively large land areas and the participation of many professional disciplines and active community support to suggest actions that reinforce rather than disrupt existing patterns.
5. The result of urban design is that the most desirable physical solution typically generates an acceptable political response.
6. In conclusion, urban design is dedicated to the public, through the means of a highly articulate and compatible architecture.

The above set of policies recognizes the importance of government regulation in shaping the physical environment. Either by incentive legislation, environmental review, or capital budget construction, the process of building cities has become irretrievably linked with government action. Legitimate urban design is primarily accountable to the public at large rather than to private interests.

Studios

The program, as a whole, is oriented toward the creation of physical situations that positively affect and influence growth and change. The design studio is the primary focus of the Urban Design Program. Students are given the opportunity to explore diverse issues and to become aware of the impact of different constraints on the form of the city.

The autumn term studio is a series of successive problems, each at a different scale of design study. The different designs reveal that physical form is not an accident and is usually the result of the combination of natural features and governmental policies. The students improve their understanding of the ways in which a city functions. They become better acquainted with the fairly regular patterns and forms of an urban area. They also expand their vocabulary for describing the physical parts and systems of a city. Most importantly, the students propose designs based on their interpretation of the particular qualities and characteristics of places and districts in the city.

The spring term studio involves a design and development study for a major urban design problem in New York City. Projects are selected to complement ongoing activities and to explore opportunities that would otherwise not come to light. The spring term studio includes political, economic, and implementation considerations. The physical design, however, is still the primary focus.

In the design studios larger plans and purposes that involve more than a single building are created and advanced. Often the outside forces of context, place, and street are more important form determinants than the functions inside the building. Major concerns of the design studios are coherence and purposeful form. Compatibility is sought between old and new, small and large, pedestrians and vehicles. The studios offer the designer opportunities to discover relationships that exist among the normally disparate parts of a city and to formulate new relationships on the basis of a larger and more public view.

Support Courses

Support courses in various disciplines complement the principal work of the design studio; their purpose is to broaden the students' understanding of the scope of issues confronting the urban designer, including the various cultural, social, economic, and political processes at work in the creation of urban form. Courses in urban theory provide a historical and cross-cultural perspective, encouraging students to learn from alternative traditions of urbanism and providing a learned frame of reference to develop the students' capacity for aesthetic judgement. Courses in land, urban policy and management, and real estate and development stress contemporary problems and approaches and provide the students with specific skills and technical expertise to improve their capacity to help direct urban design policies and goals. The program is committed to improving the students' abilities to achieve their designs effectively; it offers a balanced curriculum integrated with the design studio as closely as possible. The following issues are stressed in the support courses:

1. *The structure of the public domain*—public policies, goals, and benefits of any urban design effort.
2. *Urban morphology*, including integration of various building typologies in mixed-used urban interventions.
3. *Land use and physical development*—including density, design controls, infrastructure system, and open-space networks.
4. *Large scale development* including phasing, timing, budgeting, and governmental coordination.
5. *Transportation*—including pedestrian circulation systems, automobile and trucking, mass-transit, rail, and others.
6. *Implementation strategies* including property acquisition techniques, incentive zoning, capital sources, taxation, and private finance.

Program Requirements

Autumn Term

A6850	Urban design studio I	9 pts
A4405	Principles of urban design	3 pts
A4536	Development and finance	3 pts
	Elective	3 pts
		<u>18 pts</u>

Spring Term

A6851	Urban design studio II	9 pts
A4545	Development process II	3 pts
PI A6052	Planning law and administration, or	
PI A6332	Legal structure of development	3 pts
	Elective	3 pts
		<u>18 pts</u>

Division of Urban Planning and Historic Preservation

CHAIRMAN: Ms. Saskia Sassen

The Division of Urban Planning and Historic Preservation offers three separate master's degrees: a two-year Master of Science degree in historic preservation, a two-year Master of Science degree in urban planning, and a one-year Master of Science degree in real estate development.

Master of Science Degree in Historic Preservation

DIRECTOR: Mr. Michael Kwartler

The Master's Program in Historic Preservation is the oldest and most comprehensive of its kind in the United States. It provides specialized training for those who wish to be professionally active in preservation. The program's fundamental concern is the centrality of the meaning of the past to the living present as an essential component of a community's sense of well-being. This concern is manifested in the conscious retention of meaningful elements of both the built and natural environment and reflects an underlying belief in the validity of historical continuity between the past, present, and future.

The field of historic preservation encompasses professional activity in diverse situations. In part, historic preservation is the management of cultural resources, as it deals with the identification and protection of meaningful elements of both the built and natural environments. These elements range in scale from interiors and their furnishings, to entire urban and rural regions and include buildings, building complexes, neighborhoods, and landscapes. Protection includes not only the physical act, but also the institutional means, both legal and economic, to support that act. As our history is part of the living present, preservation also is concerned with the management of change that is responsive to protected elements of the past. These include special conservation treatments, the insertion of modern services, the adaptive re-use of historic fabric, and the design of new buildings and building complexes appropriate to their historic context.

The Columbia program offers concentrations in four sectors that correspond to the field of preservation: architectural and landscape design, history, building and landscape conservation, and preservation planning. Architectural design focuses on the making of appropriate design interventions, history with the documented identification and understanding of significant components of the past, building conservation with the analysis and stabilization of specific physical components of the past, and preservation planning with the contextual analysis of the environment and the identification of appropriate legal and financial procedures for protection. In practice these sectors overlap, and the Columbia program recognizes that overlap through its core curriculum comprised of courses from each sector and the theory and practice of preservation. This ensures the

learning of a common language and facilitates later professional cooperation and understanding.

Course work: 60 points are required. During the first year, all degree candidates study methods of documentation and building conservation, American architectural and environmental history, and the theory and practice of historic preservation planning, and participate in two design studios, one of which focuses on preservation planning policy. Before beginning their second term, students are required to select the sector that represents their area of concentration or focus. Submission of a thesis topic is a requirement for registration in the autumn of the second year. Research for the thesis in the autumn of the second year culminates with a report to the thesis advisor; the completed thesis is presented in the spring term.

The remainder of the work consists of lectures, seminars, preservation studios, and laboratory courses in conservation.

Registration: continuous registration is required until graduation. Degree candidates must complete all requirements within five years of enrollment as matriculating students. With departmental permission, a grace period of one year in which registration is not required may be allowed after completion of four terms of course work, but the use of University facilities and health services is not allowed without registration. After the grace period students must re-enroll and pay fees in order to receive the degree.

Related activities: local community involvement is encouraged whenever appropriate. Special ties are maintained with such New York City institutions as the Metropolitan Museum of Art, the Landmarks Preservation Commission, the Landmarks Conservancy, the Temple Hoyne Buell Center for the Study of American Architecture, and the Center for Preservation Research and its laboratory. These ties provide additional educational opportunities and further enrich the program.

Field trips: each year, field trips are organized to a variety of sites, principally in the Northeastern United States and occasionally to national conferences sponsored by such organizations as the Association for Preservation Technology, the Society of Architectural Historians, and the National Trust for Historic Preservation. The University provides major funding for transportation and lodging through the William Kinne Fellows Traveling Fellowship Fund. All students are required to participate in at least one field trip.

Internships: all students are required to complete a summer internship before receiving a degree. Students are individually responsible for securing internships, but are assisted in this by a special committee within the program. Internships should be approved in advance by the chairman of the division and are recognized as completed upon receipt of a letter of evaluation from the internship supervisor sent to the chairman of the department and a brief report from the student summarizing the work. In certain cases, work done before entering the program is accepted in lieu of an internship.

Prerequisites: because of the interdisciplinary nature of preservation, no specialized training is required for entrance into the program with the following exceptions:

- For all students, at least one undergraduate survey in architectural history and one basic drafting or drawing course;
- for students in the design sector, a professional degree in architecture or landscape architecture;
- for students in the conservation sector, at least one undergraduate course in chemistry, physics, biology, or earth science.

Courses Offered in Historic Preservation

(Note: not every course is offered every year)

THEORY AND PRACTICE

A6734	Classical language and literature of architecture	3 pts
A6745	Documentation I	3 pts
A4210	Basic principles of traditional construction	3 pts
A6710	Building systems integration	3 pts
A6754	Special problems in preservation practice	3 pts
A6751	Thesis I	3 pts
A6753	Thesis II	3 pts

DESIGN

A4510	Design principles for preservation	4 pts
A6749	Historic preservation studio I	4 pts
A6750	Historic preservation II	4 pts
A6774	Historic preservation III	7 pts
A6775	Historic preservation IV	4 pts

HISTORY

A6769	History of the American city	3 pts
A6730	American architecture before 1876	3 pts
A6731	American architecture after 1876	3 pts
A6766	American architecture colloquium	3 pts
A4378	History and theory of architectural preservation in Europe: 1790–1950	3 pts
A6732	American decorative arts	3 pts
A4372	Skyscrapers: art, technology, and commerce	3 pts
A6310	History of landscape architecture	3 pts
A6723	Architecture of the American acropolis	3 pts
A6724	Arcades, markets, and malls: history of retail architecture	3 pts
A6760	History of North American building technology	3 pts
A6772	Vernacular architecture	3 pts
A8790	Research problems	2 or 3 pts

CONSERVATION

A6764	Conservation science	3 pts
A6777	Conservation science lab	1 pt
A6763	Advanced conservation science and lab	3 pts

A6761	Conservation seminar: masonry	3 pts
A6739	Conservation seminar: stained glass	3 pts
A6782	Conservation seminar: wood	3 pts
A6712	Architectural finishes in America from 1650 to 1950	3 pts
A6738	Investigative techniques for historic structures	3 pts
A6762	Building pathology	3 pts
A6780	Preservation trade techniques	3 pts
A8790	Research problems	2 or 3 pts

PLANNING

A4312	Real estate finance: capital markets	3 pts
A6767	Preservation planning	3 pts
A6759	Politics of preservation	3 pts
A6770	Issues of urban preservation	3 pts
A4538	The development process	3 pts
A8790	Research problems	3 pts
A4714	Legislating aesthetics	3 pts
PI A4208	Analytic methods A	3 pts
PI A4206	Analytic methods B	3 pts
PI A6001	Theory and practice of urban planning	3 pts
PI A6052	Planning law and administration	3 pts

Program Requirements

All students in the Historic Preservation Program must complete eleven core courses, required and elective courses in one sector, and other electives, for a total of 60 points. The following eleven core courses are required:

A6740	Theory and practice of historic preservation	3 pts
A6745	Documentation I	3 pts
A6767	Preservation planning	3 pts
A6730	American architecture before 1876	3 pts
A6766	Conservation science	3 pts
A6769	History of the American city	3 pts
A4210	Basic principles of traditional construction	3 pts
A6750	Historic preservation studio II	4 pts
A6751	Thesis I	3 pts
A4510	Design principles for preservation (students in design sector substitute <i>A6749—Historic preservation studio I</i>)	3 or 4 pts
A6753	Thesis II (students in design sector substitute <i>A6775—Historic preservation studio IV</i>)	3 or 4 pts

Design Sector

This sector provides students with the increased historical and technical knowledge needed by architects for the successful solution of design problems involving historic structures. It also enhances aesthetic sensitivity through exposure to problems of restoration, adaptive use, and infill design of differing scales. These problems are addressed in studio work, which is emphasized in this sector. Solu-

tions to studio problems require careful consideration of such factors as the history of the structure and its use, the conservation of materials, the evaluation of existing structural and mechanical systems, as well as the integration of new systems, and the applicable legal and contractual constraints. Courses supplementing studio work are focused on these areas.

Completion of a thesis is a requirement for those students who, after satisfactorily completing the stated prerequisites, choose to pursue the design sector. Preparation of the thesis occurs in *Thesis I*. Submission of all materials is required by the end of the autumn term for completion of *Thesis I*. Mid-term progress reviews are also required. These materials include, but are not limited to, written analysis of the project, a proposed program, and all appropriate base drawings. The thesis is executed and brought to completion in *Studio IV* under the direction of a studio critic or thesis adviser.

Design Sector: Requirements

Prerequisite: a professional degree in architecture or landscape architecture.

Required:

A6710	Building systems integration	3 pts
A6750	Historic preservation studio II	4 pts
A6774	Historic preservation studio III	7 pts

Sector electives (choose three courses):

A4378	History and theory of architectural preservation in Europe: 1790-1950	3 pts
A6760	History of North American building technology	3 pts
A6762	Building pathology	3 pts
A6734	Classical language and literature of architecture	3 pts
A6738	Investigative techniques for historic structures	3 pts
A6761	Conservation seminar: masonry	3 pts
A6754	Special problems in preservation practice	3 pts
A6772	Vernacular architecture	3 pts
A6780	Preservation trade techniques	3 pts
A6785	Modernism in America	3 pts

History Sector

The history sector relates academic studies to preservation practice. Basic problems in design and building construction, as well as training in the preparation of measured drawings and historic structure reports, provide a practical base for a full range of graduate courses on the history of American and European architecture, decorative arts, urbanism, and related developments. In courses offered by other programs of the Graduate School of Architecture, Planning, and Preservation, and by the Department of Art History and Archaeology, this sector is broadened by covering parallel developments outside America. The thesis allows students the opportunity to apply their knowledge to an actual situation and to demonstrate how history provides a rationale for preservation.

History Sector: Requirements

Required:

A6738	Investigative techniques for historic structures	3 pts
A6731	American architecture after 1876	3 pts

Sector electives:

A6732	American decorative arts	3 pts
A6310	History of landscape architecture	3 pts
A6760	History of North American building technology	3 pts
A6734	Classical language and literature of architecture	3 pts
A6772	Vernacular architecture	3 pts
A4372	Skyscrapers: art, technology, and commerce	3 pts
A6724	Arcades, markets, and malls	3 pts
A4378	History and theory of architectural preservation in Europe: 1790-1950	3 pts
A6723	Architecture of the American Acropolis	3 pts
A6785	Modernism in America	3 pts

Conservation Sector

This sector provides students with the technical and theoretical knowledge required for the examination, documentation, and analysis of historic structures and materials. It also establishes a background for the diagnosis and treatment of building pathology. These issues are addressed through a synthesis of lectures, laboratory work, field studies, and the trade techniques workshop designed to combine a range of special architectural and scientific skills. These skills, which are required for maintaining the integrity and quality of the built environment, include the history of architecture and building technology, graphic and written documentation, materials science, and analytical laboratory and field techniques.

Conservation Sector: Requirements

Prerequisite: at least one undergraduate course in chemistry, physics, biology, or earth sciences.

Required:

A6763	Advanced conservation science and lab	3 pts
A6738	Investigative techniques for historic structures	3 pts

Sector electives:

A6780	Preservation trade techniques	3 pts
A6762	Building pathology	3 pts
A6760	History of North American building technology	3 pts
A6754	Special problems in preservation practice	3 pts
A6761	Conservation seminar: masonry	3 pts
A6739	Conservation seminar: stained glass	3 pts
A6782	Conservation seminar: wood	3 pts

A6712	Architectural finishes in America from 1650 to 1950	3 pts
A4378	History and theory of architectural preservation in Europe: 1790-1950	3 pts
A6731	American architecture after 1876	3 pts
A6732	American decorative arts	3 pts

Planning Sector

The preservation planning sector combines two strategies. The first stresses the historical and planning analysts, contextual evaluation, and physical design of the built environment. The second focuses on regulatory, legislative, economic, and planning methods used to conserve historic neighborhoods, rural landscapes, or recycled structures. These two strategies are intended to link a historical understanding of land development patterns with the analysis of interventionary methods, and link also with economic and political contexts where these forms have been determined. Both studio and thesis emphasize preservation planning issues and allow the student an in-depth opportunity to explore, develop, and criticize preservation strategies.

Planning Sector: Requirements

Required:

PI A6001	Theory and practice of urban planning	3 pts
PI A4208	Analytic methods A	3 pts
PI A4206	Analytic methods B	3 pts

Sector electives:

A6723	Architecture of the American Acropolis	3 pts
A6724	Arcades, markets, and malls	3 pts
A6759	Politics of preservation	3 pts
A6770	Issues of urban preservation	3 pts
PI A4210	Introduction to computers in planning and preservation	3 pts
PI A4304	Introduction to housing	3 pts
PI A4312	Real estate finance I: capital markets	3 pts
PI A4540	Environmental planning	3 pts
PI A4714	Legislating aesthetics	3 pts
PI A6056	Planning law and administration	3 pts

Electives

Electives are subject to approval by each student's adviser and may be chosen from other offerings in historic preservation, from other programs of the Graduate School of Architecture, Planning, and Preservation, from the Department of Art History and Archaeology, or from graduate courses offered by other departments of the University.

Waivers from required courses can be granted when proof of comparable course work is presented. Points released by such waivers will increase allowance for electives.

Scholarships and Prizes

Scholarships available to students in this program include the Quester's Award for distinguished undergraduate work in architecture, the William Kinne Fellows Traveling Fellowships for postgraduate travel and the Starensier Prize for excellence in architectural design.

The Cleo and James Marston Fitch Student Prizes are awarded annually by the Preservation Alumni Inc. to the most promising students in the Historic Preservation Program at the end of their first year.

Joint Degree Programs

The Graduate School of Architecture, Planning, and Preservation offers the opportunity for certain qualified students to work toward two degrees simultaneously: the Master of Architecture and the Master of Science in historic preservation, or the M.S. in urban planning and the M.S. in historic preservation. Requirements are completed in four years rather than the five required for the three-year M.Arch. and two-year M.S. in historic preservation degrees and in three years for the urban planning/preservation degrees. The full requirements for each degree are met in this shortened time by allowing certain courses to count toward both degrees and by using electives from one program to meet requirements in the other.

Admission requirements for all programs must be met. Students may apply to both programs before matriculation by checking both of the appropriate boxes on the application form, or they may apply for the Master of Architecture or Urban Planning after entering the Historic Preservation Program or vice-versa. Upon entering the Historic Preservation Program, those students who indicate to their advisers an interest in applying to either joint degree program are directed to take a special program of courses that allows them to fulfill appropriate historic preservation requirements. Normally, joint degree candidates take their first year of course work in the Historic Preservation Program and begin their comprehensive studio sequence in the second year. In the autumn term of the fourth year, joint degree candidates in architecture and preservation enroll in *Thesis I* for the preparation of the thesis; they execute the thesis in *Studio IV*. While third year joint degree candidates in planning and preservation enroll in *Thesis I* for the preparation of the thesis, they execute the thesis in *Thesis II*.

At any time during the four years, students may elect to withdraw from one program and complete requirements for one degree only. Students in the Graduate School of Architecture, Planning, and Preservation initially enrolled in one program may apply during their first year for admission to the other, and in normal circumstances can complete joint program requirements within three or four years. Because of the complexities of point sharing and scheduling, students

applying after the first year must be prepared to spend additional time to complete requirements for both degrees.

Advanced Standing

Any student who has already received a master's degree in architecture may apply for up to 24 points of advanced standing toward a master's degree in historic preservation, provided the student chooses the design sector.

Master of Science Degree in Real Estate Development

The Division of Urban Planning and Historic Preservation offers an intensive one-year Master of Science degree in real estate development that prepares students to enter the real estate development industry. This industry plays a critical role in shaping the built environment through the construction of housing, offices, commercial centers, and industrial sites. It creates not only structures, but also employment, tax revenues, public spaces, cultural symbols, and social environments of lasting significance. While the private sector dominates real estate development, government agencies, public benefit corporations, and nonprofit groups are increasingly active participants.

The program of study provides an interdisciplinary, carefully coordinated exposure to all major elements of the development process: finance, marketing, politics, law, design, construction, planning, and history. Students are trained for responsible positions in public and private sector real estate development, with particular emphasis on the skills and sensitivities necessary to develop real estate successfully in our nation's major urban areas.

Program Requirements

The Master of Science degree in real estate development is a one-year, 36-point degree. Students attend full-time during the autumn and spring terms, complete their final real estate development projects immediately following the spring term, and are awarded degrees in October. In the courses, theory, quantitative techniques, and extensive case study materials are combined. Students enrolled in the program who have a strong academic background in a required course may petition for a waiver. If a waiver is granted, students may substitute an elective course.

The final real estate development project is begun during the spring term under the supervision of a faculty adviser. Final projects are detailed development proposals, evaluations of important completed projects, or analyses of major public laws or private sector initiatives in real estate development.

AUTUMN TERM

PI A4312 Real estate finance I: capital markets	3 pts
PI A4538 The development process: concept to completion	3 pts

PI A6352	Market analysis for development	3 pts
PI A6354	Political environment of development	3 pts
PI A6356	Construction technology and management	3 pts
	Elective	3 pts

SPRING TERM

PI A4314	Real estate finance II: advanced financial packaging	3 pts
PI A6330	Site planning and support systems for development	3 pts
PI A6332	Legal environment of development	3 pts
PI A6350	Design and technology for development	3 pts
PI A6335	Real estate development seminar	3 pts
	Elective	3 pts

Real Estate Development Advisory Board

The following thirty-one distinguished individuals serve as an advisory board for the real estate development program and periodically deliver guest lectures:

Kent Barwick

President, Municipal Art Society of New York

Dennis Blackett

President, Housing Innovations, Inc.

J. Max Bond, Jr.

Dean, School of Architecture, City College

John Burgee

John Burgee Architects with Philip Johnson

Stanton Eckstut

Cooper, Eckstut Associates

Scott A. Ervin

Executive Vice President

First Boston Real Estate Development Corporation

Irving R. Fischer

Chairman, HRH Construction Corporation

Charles A. Goldstein

Partner, Shea and Gould

Benjamin D. Holloway

Chairman, Equitable Real Estate Group, Inc.

George Klein

President, Park Tower Realty

Anthony Knerr

Executive Vice President for Finance and Treasurer

Columbia University

A. Eugene Kohn
President, Kohn Pedersen Fox Associates

Benjamin V. Lambert
President, Eastdil Realty Inc.

Phil LaRocco
Director, Economic Development Department
Port Authority of New York and New Jersey

Stephen Lefkowitz
Partner, Patterson, Belknap, Webb & Tyler

Edward Logue
President, Logue Development Company

Robert Maguire
Maguire Partners

J. Frank Mahoney III
Chairman and President of the Commercial Group
Coldwell Banker

Martin L. Millspaugh
Executive Vice President
The Enterprise Development Company

Edward Minskoff
Executive Vice President, Olympia and York

Jack Naiman
The Naiman Group

Frederic S. Papert
President, 42nd Street Development Corporation

Philip Pilevsky
President, Philips International Holding Corporation

Michael V. Prentiss
President, Cadillac Fairview Urban Development, Inc.

Frederick P. Rose
Chairman, Rose Associates

Sheldon Seevak
Partner, Goldman, Sachs and Company

Charles A. Shorter
Senior Vice President
Real Estate Research Corporation

Jean Solomon
President, Solomon Equities, Inc.

Jerry I. Speyer
Managing Partner, Tishman Speyer Properties

Louise M. Sunshine
President, Sunshine Group Ltd.

Lynda Simmons
President, Phipps Houses

Arthur P. Ziegler, Jr.
President, Cranston Development Company

Ph.D. in Urban Planning

The Ph.D. program is administered by the Graduate School of Arts and Sciences. For information, write to Professor Elliott D. Sclar, Director of the Ph.D. Program in Urban Planning, 410 Avery Hall, Columbia University, New York, NY 10027.

Master of Science Degree in Urban Planning

Purpose

The primary purpose of the Urban Planning Program is the education of students so that they can contribute their knowledge, skills, and human understanding to improving the quality of life in urban society. Course work, field work, and research are means to this end. The aim of the program is to facilitate the joint efforts of students, faculty, and staff in achieving the goal of improving urban life.

Urban planning is inherently an economic, social, political, and physical process that applies technical knowledge, research findings, and past experience to the city of today and tomorrow. The real challenge of planning education today is the effective integration of architectural design and technical skills with the methods of applied social science to ensure sensitive physical and spatial planning. The program meets this challenge through a curriculum that provides students with a thorough understanding of the basic processes that produce built environments, as well as the techniques necessary to intervene effectively in these processes.

The faculty is committed to the vision of an improved city with expanded opportunity, social justice, and a better quality of life. The emphasis of the program is the comprehensive planning and analysis of the built environments of the major urban regions of the world. The fundamental event in urban life today, and in the foreseeable future, is the dramatic spatial restructuring of the built environment that is under way in large, mature cities in the United States and abroad. This restructuring is the product of a complex, poorly understood transformation of the economic, demographic, social, and technological forces governing urban development. Nowhere is this restructuring more pronounced than in New York City, with its jarring juxtapositions of abandonment and gentrification, industrial exodus and office expansion, private wealth and public austerity. The city is often the first to experience new urban phenomena and public policy responses, making it the perfect laboratory in which to study the problems and opportunities inherent in the restructuring process.

International activities concentrated in the city, including those at United Nations headquarters, provide further resources and focus for the division's program of planning for an increasingly interdependent world. As part of Columbia University, the breadth and quality of the offerings of the Urban Planning Program also go far beyond that which the program's size might otherwise indicate, since the program is able to draw upon the resources of the Graduate School of Arts and Sciences and of the other professional schools and educational and research facilities of the University.

Joint Degree Programs

To utilize more fully the facilities and resources of the University and to provide opportunities for students to pursue studies in related fields, the Graduate School of Architecture, Planning, and Preservation, in conjunction with other schools and faculties, has established several joint degree programs. Each program leads to the award of two professional degrees. Students who wish to enter one of the programs described below must apply to each of the participating schools and be admitted to both. They should consult the respective school's admissions office for further information.

Urban Planning and Architecture

The Graduate School of Architecture, Planning, and Preservation offers a joint program leading to the degree of Master of Architecture and the degree of Master of Science in urban planning. A student must enroll for 130 points of credit, which may be earned in eight terms in residence in the School.

Urban Planning and Business

The Columbia Business School and the Graduate School of Architecture, Planning, and Preservation offer a joint program leading to the degree of Master of Business Administration and the degree of Master of Science in urban planning. A student must enroll for 90 points of credit, which may be earned in six terms in residence—three terms in the Business School and three terms in the Graduate School of Architecture, Planning, and Preservation.

Urban Planning and Historic Preservation

The Graduate School of Architecture, Planning, and Preservation offers a joint program leading to the degree of Master of Science in historic preservation and the degree of Master of Science in urban planning. A student must enroll for 90 points of credit, which may be earned in six terms in residence in the Graduate School of Architecture, Planning, and Preservation.

Urban Planning and International Affairs

The School of International and Public Affairs and the Graduate School of Architecture, Planning, and Preservation offer a joint program leading to the degree of Master of International Affairs and the degree of Master of Science in urban planning. A student must enroll for 90 points of credit, which may be earned in five terms in residence—at least two terms in the School of International and Public Affairs and three terms in the Graduate School of Architecture, Planning, and Preservation.

Urban Planning and Law

The School of Law and the Graduate School of Architecture, Planning, and Preservation offer a joint program leading to the degree of Juris Doctor and the degree of Master of Science in urban planning. A student must enroll for 120 points of credit, which may be earned in eight terms in residence—six terms in the School of Law and two terms in the Graduate School of Architecture, Planning, and Preservation.

Urban Planning and Public Health

The School of Public Health and the Graduate School of Architecture, Planning, and Preservation offer a joint program leading to the degree of Master of Public Health and the degree of Master of Science in urban planning. A student must enroll for 80 points of credit, which may be earned in five terms in residence—two terms in the School of Public Health and three terms in the Graduate School of Architecture, Planning, and Preservation.

Urban Planning and Social Work

The School of Social Work and the Graduate School of Architecture, Planning, and Preservation offer a joint program leading to the degrees of Master of Science in social work and Master of Science in urban planning. A student must enroll for 90 points of credit, which may be earned in six terms in residence—three terms in the School of Social Work and three terms in the Graduate School of Architecture, Planning, and Preservation.

Columbia-Dillard Joint Degree Program in Liberal Arts and Urban Planning

A five-year joint degree program was established in 1985 with Dillard University in New Orleans, leading to a Bachelor of Arts degree from Dillard and a Master of Science degree in urban planning from Columbia. It is the first joint degree program in urban planning in the nation between a historic black university and a graduate program in urban planning. Students spend three years as undergraduates at Dillard and two years as graduate students at Columbia.

Supplemental Programs

Under the William F. Kinne Fellows Traveling Fellowship Program, available to students in the Graduate School of Architecture, Planning, and Preservation, a number of planning students are annually eligible to take part in study programs abroad. In order to expand their skills, students are also encouraged to accept employment in planning offices during their summer vacations. Community consultation is an integral part of the curriculum, and several such projects are continuously in operation.

Program Requirements

The Master of Science degree in urban planning is a 60-point two-year program. Pedagogically, this program is centered on the belief that the best professional education takes place in an environment of learning by doing, reinforced by classroom work that provides a thorough understanding of the economic, social, political, and physical aspects of the comprehensive planning and analysis of the built environment. This approach is implemented by a program of requirements, which includes a workshop in planning skills, a planning studio, courses in analytic methods, and courses in planning theory and practice.

Students are required to complete 39 points in eleven core courses, 9 points in a sector specialization of their own choosing, and 12 additional points in elective courses. Students may take courses offered elsewhere in the University to fulfill some or all of their elective requirements. A master's thesis is also required.

Term 1

PI A4208	Analytic methods A	3 pts
PI A6001	Theory and practice of urban planning	3 pts
PI A6290	Workshop in planning skills	3 pts
PI A4112	Physical structures of cities	3 pts
	Sector specialization elective	3 pts

Term 2

PI A4206	Analytic methods B	3 pts
PI A6911	Planning studio	3 pts
	Sector specialization elective	3 pts
	Elective	3 pts

Term 3

PI A6850	Research design	3 pts
PI A4151	Foundations of urban economic analysis	3 pts
	Sector specialization elective	3 pts
	Elective courses (2)	6 pts

Term 4

PI A6225	The planning process	3 pts
PI A6918	Thesis	3 pts
PI A6052	Planning law and administration	3 pts
	Elective courses (2)	6 pts

Sectors

A minimum of three courses must be taken within a sector to fulfill the sector specialization requirement. A student interested in concentrating in a sector not listed below may construct his or her own specialization, subject to the approval of the chairman of the Division of Urban Planning and Historic Preservation. The following five sectors are offered in the Urban Planning Program:

Developing Countries

Health and Human Services Planning

Housing

Physical Planning and Infrastructure Development

Urban Economic Development

The Shape of Two Cities: New York/Paris (Special Undergraduate Program)

DIRECTORS: Mr. Roy Strickland, New York
Ms. Meredith Sykes, Paris

This special program for undergraduates enrolled in other universities is a junior year introduction to architecture, urban planning, and historic preservation held in New York and Paris. The program offers a unique undergraduate curriculum in either architecture or in urban planning/historic preservation which introduces these fields to mature, intellectually capable students. A full year of academic credit is offered through a carefully constructed program of history, theory, and studio courses conducted in English. Students are given the academic preparation to enter high-quality graduate programs in the three disciplines.

During the autumn students live and study in New York and enjoy the resources of Columbia University and the Graduate School of Architecture, Planning, and Preservation. As part of Columbia University, the School offers access to athletic, computer, and other student facilities; public lectures; extracurricular activities; the Center for Preservation Research; the Buell Center for the Study of American Architecture; and Avery Library, the nation's leading architecture and planning research collection. Students spend the spring in Paris based at the program's studio in the Marais district near the Place des Vosges. This facility includes a library and seminar and computer rooms overlooking an eighteenth-century courtyard.

Program Requirements

All students applying to the program must choose either the architecture option or the urban planning/historic preservation option. Each option provides 32 points of course work to be completed in two terms. Courses are taught by faculty members of the Graduate School of Architecture, Planning, and Preservation and by professional architects, planners, and preservationists in both cities.

Architecture Option

Autumn Term: New York

A4000 Design studio.

4 pts

Introductory studio on the analysis, representation, and design of architectural projects for New York City. The studio combines long-term projects with sketch problems. Tutorials and lectures on graphics skills.

A4027 Architecture, planning, and preservation: New York. 3 pts

A survey of past and present work in the three disciplines which emphasizes their interdisciplinary nature. Guest lecturers representing public and private efforts in New

York's planning, design, and historic preservation. Special attention is paid to theories of design, planning, and historic preservation which have shaped the 20th-century city. Class projects by teams that include members from both options in the program.

A4110 Structures.

3 pts

An introduction to the basic concepts of structural action by means of models, slides, and films. Both elementary and refined concepts are qualitatively considered. Special consideration to modern structural materials and to both classical and contemporary structural systems.

A6769 History of the American city.

3 pts

The process of continuity and change in American cities from the colonial period through the 20th century, covering industrialization, political conflict, reform movements, geographical and ethnic diversity, bureaucratic rationalism, and urban culture, with emphasis on how physical form responded to or influenced social and political forces over time.

Elective.

3 pts

Any course in the Graduate School of Architecture, Planning, and Preservation or any French language class for which the student is eligible.

Spring Term: Paris

A4010 Design studio.

4 pts.

Architectural and urban design projects for sites in Paris; portfolio workshop.

A4025 Freehand drawing.

3 pts

Drawings from nature and the architecture of Paris; exercises in light and shade, line and perspective drawing, and color.

A4029 Architecture, planning, and preservation: Paris.

3 pts

Continuation of New York course with focus on Paris.

A4030 The development of Paris.

3 pts

A discussion of the 2,000 year development of Paris through a combination of lectures and site visits. Emphasis on the interrelationship between urban and architecture history.

A4031 History of European cities.

3 pts

Focus is on the historical development of European cities and their physical form, architecture, and infrastructure. Cultural, social, and political contexts of the development of European cities are reviewed, as are the interventionary procedures used to reorganize the cities' forms over time.

Urban Planning/Historic Preservation Option

Autumn Term: New York

A3051 Introduction to urban planning

3 pts

An introduction to the theory and practice of urban planning. Explorations of the history and tradition of planning practice in America, theoretical underpinnings that serve as the rationale for public planning activity, and selected contemporary public policy debates.

A4027 Architecture, planning, and preservation: New York.

3 pts

For course description, see under Architecture Option, Autumn Term: New York.

A4028 Historic preservation: reading the built environment of New York. 3 pts

Through intensive, illustrated lectures and field trips examining the architecture, landscape, and urban infrastructure of the New York metropolitan area, students learn essential skills for above-ground archaeology—reading and placing in historical context the physical history that surrounds them.

A6769 History of the American city. 3 pts

For course description, see under Architecture Option, Autumn Term: New York.

Elective 3 pts

Any course in the Graduate School of Architecture, Planning, and Preservation for which the student is eligible.

Spring Term: Paris**A4025 Freehand drawing.** 3 pts

For course description, see under Architecture Option, Spring Term: Paris.

A4029 Architecture, planning, and preservation: Paris. 3 pts

For course description, see under Architecture Option, Spring Term: Paris.

A4030 The development of Paris. 3 pts

For course description, see under Architecture Option, Spring Term: Paris.

A4031 History of European cities. 3 pts

For course description, see under Architecture Option, Spring Term: Paris.

A4044 Seminar in comparative planning and preservation. 5 pts

Comparison of the theory and practice of urban planning and historic preservation in New York and Paris. Presentations of final research projects by students.

Courses of Instruction

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; C, Columbia College; E, Engineering and Applied Science; F, General Studies; G, Graduate School of Arts and Sciences; L, Law; P, Public Health; R, School of the Arts; S, Summer Session; T, Social Work; W, Inter-Faculty.

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

- 0 Course that cannot be credited toward any degree
- 1 Undergraduate course
- 3 Undergraduate course, advanced
- 4 Undergraduate and graduate course
- 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 joined by a hyphen indicate a course that runs through both terms (e.g., *Architecture A3121x-31122y*). The first half is prerequisite to the second half unless the course description says otherwise.

Points of Course Credit

The number of points of credit a course carries *per term* 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 of 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 Graduate School of Architecture, Planning, and Preservation are posted in Avery Hall at the time of registration. The University also publishes this information in a separate bulletin, which is distributed at registration.

Division of Architecture

Design Studio: Master of Architecture Program

The design program comprises approximately one-third of the total points required for graduation. It is continuously evaluated and modified in order to respond better to the dynamic nature of the practice of architecture. Short and long design problems, case studies, historical and technological analyses, and research projects are utilized where deemed appropriate.

The student-faculty ratio varies from 13 to 1 to 10 to 1. During the three-year program, each student will study with at least six different critics on various problems that have in common a concern with fundamental design issues as these are defined by faculty and students.

Design reviewers include visiting architects, historians, and critics as well as faculty members from the Planning, Historic Preservation, Building Design, and Urban Design Programs of the School.

The following faculty members have recently taught in the design studios: Amy Anderson, Kevin Bone, Beatriz Colomina, Neil Denari, Elizabeth Diller, Judith DiMaio, Kenneth Frampton, James Garrison, Dennis Gibbens, Romaldo Giurgola, Leopold Gerstel, Marta Gutman, Thomas Hanrahan, Klaus Herdeg, Steven Holl, Paola Iacucci, John James, Ann Kalla, Panos Koulermos, William MacDonald, Robert Marino, Robert McCarter, Mary McLeod, Richard Plunz, James Stewart Polshek, Daniel Solomon, Robert Stern, Roy Strickland, James Tice, Susana Torre, Karen Van Lengen, Lauretta Vinciarelli, Rafael Vinoly, Harry Wolf, Leonardo Zylberberg.

Architecture A4001	Comprehensive studio I	7 pts
Architecture A4002	Comprehensive studio II	7 pts
Architecture A4003	Comprehensive studio III	7 pts
Architecture A4004	Comprehensive studio IV	7 pts
Architecture A4005	Comprehensive studio V	7 pts
Architecture A4006	Comprehensive studio VI	7 pts

The first-year studios advance the student from abstract exercises predicated on the notion of space-form, structure, and route to a range of small public buildings. The second-year studios deal with housing as a generic element in the urban fabric and with a medium-scaled public building. The aim is to allow the student to experience, in sequence, the difference between the public and private aspects of the architectural task. In the third-year studios, the student is asked to consider, in sequence, two generic building types: the "stadium" in which a middle- to long-span structure both accommodates and represents the institution, and the "monastery" type, which as a world in miniature accommodates within itself both the public and private realms. In general, the pedagogical approach to the teaching of design is typological.

History/Theory

Architecture A4307 Contemporary architecture in Non-Western contexts. 3 pts

Ms. Celik.

Lectures on a series of topics in contemporary non-Western architecture. Selected current themes and their realization by some leading third world architects: modernization, change, preservation of the architectural heritage, influence of Western architecture, the dichotomy between the old and the new, and the pressing social and economic needs of rapidly changing societies.

Architecture A4330 Urban history I. 3 pts

Ms. Wright.

Urban morphology and city life in western cities from antiquity through the capital cities of mid-18th-century Europe, showing connecting trends in architecture and urban form; the discourse on cities; civic culture and civic ritual; public and private space; the role of the architect and urban planner; cultural and formal complexity; and adaptation to change.

Architecture A4331 Urban history II. 3 pts

Ms. Wright.

Continuation of A4330; examination of patterns in western cities from 1850 to 1950.

Architecture A4341 American architecture: 1876-1976. 3 pts

Mr. Stern.

A survey of American architecture from the centennial to the bicentennial. Individual lectures are structured along broad thematic lines and supplemented with readings from a wide variety of primary and secondary sources.

Architecture A4344 Traditional Japanese architecture. 3 pts

Mr. Kudo.

This seminar examines the contemporary validity of Japanese classic aesthetics through the study of ancient architectural design. Japan has developed her art depending on feeling rather than reason. This obsession has reached the ontological ground. Her goal of art was the realization of what nature desires to be. The intention in the course is to re-experience the unique structure of perception and signification in Japanese architecture and related arts. In the first part basic knowledge about Japanese architecture is provided—its history, building typologies, and construction methods. In the second part students read fundamental literature about Japanese aesthetics and ethics, and, in the last part, the formative analysis of the selected structures and spaces takes place.

Architecture A4348 Thresholds in the history of Western architecture I.

3 pts

Mr. Kaufman.

The two semester sequence *Thresholds in the history of Western architecture* provides students with a basic critical understanding of significant developments in architectural history during the modern period. Emphasis on moments of significant change in architecture, whether they be theoretical, economic, technological, or institutional in nature. In this respect each lecture generally focuses on a theme, such as positive versus arbitrary beauty, enlightenment urban planning, historicism, structural rationalism, the housing reform movement, iron and glass technology, etc. Topics include changes generated by developments internal to architecture itself or by events understood to be external to the discipline, at least as it was conceived at that moment in time.

Architecture A4349 Thresholds in the history of Western architecture II. 3 pts
Ms. McLeod.

Continuation of A4348; examination of transformations in Western architecture from 1850 to 1930.

Architecture A4351 Formal structure in Central Asian architecture. 3 pts
Mr. Herdeg.

Open to second- and third-year students in M.Arch. program.

Prerequisite: the instructor's permission.

Research seminar on the nature of formal structures of Central Asian architecture, with emphasis on Islamic examples. Predominance of examples from Iran, Turkestan (USSR and China), and India. Some contrapuntal examples of traditional Chinese architecture. Individual research within a small seminar group.

Architecture A4353 Le Corbusier and the evolution of modern architecture. 3 pts
Mr. Frampton.

Lectures relating the evolution of the work and thought of Le Corbusier to the development of European architecture as a whole. Projects and built works are examined in the context of Northern European and Mediterranean traditions, technological and cultural transformations, ideology and cultural critique, antique forms and modern order, as well as through more specific aspects of Le Corbusier's education, practice, and theory. Requirements include analytical models of selected buildings, papers on theoretical topics, and weekly readings.

Architecture A4354 Building types: the transformation of institutional form. 3 pts
Ms. Torre.

A seminar exploring the historical transformation of architectural form as it relates to institutional transformations from the Renaissance to the present. Selected building types are studied within the context of western social institutions: libraries, museums, market and exhibition halls, stores. Analyses address context, spatial order, construction technologies and materials, environmental relationships, and building form as they relate to the institution's purpose and structure and to the cultural, social, and economic contexts.

Architecture A4355 The architecture of Frank Lloyd Wright: critical analysis. 3 pts
Mr. McCarter.

A seminar undertaking critical analyses of selected works by Frank Lloyd Wright from throughout his career. The analytical process emphasizes the underlying principles of design set into the work of architecture by the manner in which it is ordered and constructed. To that end the following aspects are examined: historical and physical context, external and internal hierarchy and sequence, spatial and structural order, light, material, finish. Introductory lectures by professor and seminar presentations by students prepared in individual tutorial sessions.

Architecture A4357 Renaissance seminar. 3 pts
Mr. Giurgola.

An introduction to the architecture of the Renaissance through the study of intentions, results, methodologies, and form. Man-made environment and building complexes studied from the point of view of process and in relation to the present. The Italian experience from the 13th to the early 15th century.

Architecture A4358 Renaissance architecture and urbanism. 3 pts
Mr. Adams.

A study of the major developments in Italian architecture and urban history from Brunelleschi to Palladio. Topics include civic and ecclesiastical architecture, as well as popular housing, fortifications, technology, and engineering. Architecture is also examined in its relation to the developing consciousness of urban forms as seen in selected examples (Florence, Pienza, Ferrara, Urbino, and Rome), with attempts to draw some concrete historical lessons.

Architecture A4361 Classicism and anti-classicism: Raumplan versus Plan-libre. 3 pts**Ms. Colomina.**

Comparative analyses of the evolution of Adolf Loos and Le Corbusier's thought and practice in relation to the development of 20th-century architecture. Both architects developed a comprehensive theoretical base for their work not only in terms of their architectural concepts but also with respect to a hypothetical theory of culture in industrialized everyday life. This seminar focuses on the relationships between private and public space in Loos's houses and Le Corbusier's villas of the '20s. The treatment will touch on *La-suite-de-enfilade* of traditional French architecture, the Arts and Crafts tradition (Muthesius's English House), the contribution of Auguste Perret, Loos's Raumplan and Le Corbusier's Plan-libre.

Architecture A4366 Historical evolution of housing in New York City. 3 pts**Mr. Plunz.**

A historical survey of the design of housing in New York City including some reference to the interrelationship with other cities in the United States and Western Europe. Major emphasis is on the period after 1850. The architecture of housing is contrasted with a broad range of income groups and modes of development, with discussion of the underlying cultural, social, and political context. Examples trace the evolution of types, to include the early high-rise apartment, the tenement, the garden apartment, the urban and suburban single-family house, and the "tower-in-the-park."

Architecture A4370 Italian rationalism. 3 pts**Ms. Latour.**

A seminar on rationalist architectural work, thought, and philosophy, from the 1920s to the present, set against the Italian cultural background, in order to clarify the most characteristic tendencies up to the recent development of neo-rationalism. The production of chosen architects is examined by selecting examples of their work, and discussing the theoretical framework underlining their formulation; in this way, the intention is to demonstrate the always existing relationship between theoretical positions and specific artistic production.

Architecture A4372 Skyscrapers: art, technology, and commerce. 3 pts
Mr. Bluestone.

Survey of a century of skyscraper architecture. Review of the aspirations, ideals, and criticisms influencing skyscraper form, the debates surrounding skyscraper technology, and the changing images of the white-collar workplace in the skyscraper. Analysis of the skyscraper's eclipse of the traditional forms of civic and religious monumentality and planning and zoning theories concerning the skyscraper's place in modern urbanism.

Architecture A4374 Contemporary theory and criticism of architecture. 3 pts**Ms. McLeod.**

Seminar on issues in architectural theory and criticism that have emerged in the past two decades. Topics discussed include semiology, post-modernism, rationalism, typology, and Marxist cultural theory.

**Architecture A4377 London, metropolis of the 19th century:
architecture and urban development.**

3 pts

Mr. Kaufman.

Research seminar with focus on specific themes, charting the interplay of architecture, government, social reform, and real estate development in London: 1780-1914. Topics include landownership and patterns of residential development; housing types; legislation and public architecture; sanitary reform; parks and public cemeteries; suburbs and slums; literary myths of London.

**Architecture A4378 History of the theory and practice of architectural
preservation.**

3 pts

Mr. Kaufman.

Limited to 15 students.

A seminar exploring changing attitudes and methods of preservation from ancient times to the present. Topics include the concept of relics and sacred places, the role of archaeology, the work of survey organizations and governments, the development of legislation, the conflict between preservation and restoration, the impact of city planning and of the ecological movement. Readings and class discussion are emphasized. Students prepare short papers and class presentations based on the weekly topics.

Architecture A4380 Architectural field study.

3 pts

The staff.

Particular projects are developed by students under the tutorship of assigned faculty members, in conjunction with topics that are prepared during travel-study.

**Architecture A4381 Architecture and the printed media:
between theory and criticism.**

3 pts

Ms. Colomina.

Seminar on theoretical and critical issues that relate to the transformation of architecture in its mechanical reproduction and diffusion by the press. The development of this transformation is traced within a historical framework, ranging from modernism and the avant-garde to the post-modern condition. Discussions on the most recent theoretical discourse: post-structuralism, feminism, critical theory, etc.

**Architecture A4386 Modernity, thought, and culture:
parallel readings in architecture, philosophy, and music.**

3 pts

Mr. Holl.

A seminar examining a series of texts on music and phenomenology, with implicit analogy to architectural composition. Writings by Adorno, Griffin, Stravinsky, Husserl, Merleau-Ponty, and Heidegger are the subject of student presentations and class discussions, with a research paper and analogical model also required.

Architecture A4387 English architecture, 1830-1930.

3 pts

Mr. Kaufman.

Architecture in Great Britain from the rise of historicism (Greek and Gothic) to the modern movement. Lectures explore the ideology of styles, debates over the introduction of new structural materials and building types, and the role of architecture in a changing social structure.

**Architecture A4395 Modern architecture and critical form,
1935-1985.**

3 pts

Mr. Frampton.

An introduction to the late modern tradition of critical theory and practice. Concentration on European works and movements that can be seen as resisting the current tendency to

reduce architecture to little more than scenography. The post-avant-gardist line in the modern movement from Aalto's organic architecture approach of the mid-thirties to the more critical aspects of current architectural practice. At midterm and at the end of the term, students submit a course notebook comprised of typed notes and commentary on the required reading. An essay is optional.

Architecture A4400 Formal principles of architectural design. 3 pts
Ms. Anderson.

The investigation and analysis of buildings within and outside of their cultural context. Emphasis on those design principles that are true for differing cultures and building purposes because they derive their meaning from basic biological and psychological traits as well as from inherent, and thus stable, formal characteristics. Examples of architecture from nonindustrial societies as well as from preindustrial and industrial Europe and America. Lectures and discussions. Intended as a corollary to *Comprehensive Studio I*.

Architecture A4409 Theories of architecture, 1700-1900. 3 pts
Mr. Kaufman.

Limited to 15 students.

A seminar stressing reading and discussion of selected texts drawn from Western Europe, Great Britain, and the United States. Each year a central theme is explored such as the origins of functionalism, the theory and design of ornament, or historicism, always seeking through critical analysis to reveal underlying ideologies. Students prepare short papers and brief class presentations based on the readings.

Architecture A4410 Design attitudes in European and American urbanism: 1750-1930. 3 pts
Mr. Plunz.

A topical history of architectural approaches to urban form-making. Emphasis is placed on developments in the United States in relation to Europe and on the formation of design vocabulary in relation to political and cultural issues.

Architecture A4420 Comparative critical analysis of built form. 3 pts
Mr. Frampton.

Comparative critical team analysis used as a device for revealing both explicit and implicit intent in the design of built form, the analytical process predicated on typological categories in which buildings of the same type are compared as embodiments and expressions of differing conceptions of nature, use, production, and value. Apart from their typological arrangement, buildings are usually ordered so as to reveal also a particular historical development. The aim is threefold: (1) to reveal through analysis the capacity of built form to carry meaning; (2) to sensitize the student designer to subtle significances in spatial sequence, adjacency, detailing, etc.; and (3) to see design as cultural discourse. Analytical materials are drawn from either the 19th or the 20th century.

Architecture A4435 English architecture, 1580-1830. 3 pts
Mr. Kaufman.

Lectures surveying the national tradition of architecture of England. While the work of certain architects (Wren, Soane) is set forth monographically, the intention throughout is to develop an understanding of how native assumptions about architectural form and significance interact with foreign fashions; how taste or fashion has been used by architects and patrons to define social relationships and to exploit conditions of architectural production; and how shifting patronage conditions and modes of life have shaped that production. Focus on "high architecture," but individual lectures deal with the development of landscape, both planned and unplanned, with the impact of bourgeois leisure and the industrial revolution on the growth of towns, and with the development of London—development in the real estate as well as the historical sense.

Architecture A4445 The palazzo: between type and place. 3 pts**Mr. Tice.**

A seminar examining the palazzo as a building type of unparalleled influence on subsequent architectural thought. The inherent conflict between idealized utopian form and specific urban context/local values is central to the course, and the history of the Italian palazzo from the fifteenth to the eighteenth centuries is studied as a dialogue between type and place.

Architecture A4450 Scandinavian modern movement:**Utzon and Aalto.**

3 pts

Mr. Frampton.

Seminar comparing the works of Alvar Aalto and Jorn Utzon, in order to penetrate into the Scandinavian modern tradition. Students work in teams of two making analytical presentations that compare each project to certain precedents, that compare two projects (one by each architect), and that culminate in the production of final models.

Architecture A4480 Elements of landscape architecture.

3 pts

Mr. Quennell.

Introduction to the various factors that contribute to the man-made landscape, whether it be the surroundings of a single building or the character of a region. Lectures cover three general areas of interest: the natural environment, development of landscape architecture, and techniques of landscape architecture.

Architecture A4547 Case studies in urban design.

3 pts

Ms. Celik.

A seminar examining the process of "inventing traditions" in response to rapid social and technological transformations of existing traditions between 1850-1920. The theoretical foundations of these "new" traditions in urban design are explored through an examination of writings and projects of major figures, among them E. Haussman, C. Sitte, T. Garnier, E. Howard, D. Burnham, and B. Taut.

Architecture A4565 Studies in the history of architectural representation.

3 pts

Mr. Kaufman.

A seminar exploring selected topics in the history of architectural representation considered in its broadest sense—drawings, book illustrations, photography, and verbal description. The unifying theme is the problem of serial imagery—the arrangement of images to form a single coherent representation. The resources of Avery Library are used extensively, with presentations by the professor, analyses by students, and class discussion.

Architecture A4573 The Islamic city.

3 pts

Ms. Celik.

A seminar analyzing the evolution of urban form in major Islamic cities in the Middle East, North Africa, and Spain, with reference to social, economic, political, and cultural conditions. Individual case studies of each city are combined with discussion of more general issues. Student presentations and final collected paper.

Architecture A4383 German modern movement, 1918-1933.

3 pts

Mr. MacDonald.

A seminar examining specific projects and buildings from the period of the Weimar Republic. Background material includes major theoretical texts. Students discuss the relationship between the buildings and the theoretical debate of the period. Lectures by the professor, student analytical presentations, and collected final paper.

Architecture A4755 The architecture of Louis I. Kahn: critical analysis. **3 pts**

Ms. Latour.

A seminar on the works of Louis I. Kahn, studied from theoretical, philosophical, and architectural points of view, taking into consideration the historical and circumstantial context in which he worked as it relates to his continuous search for the fundamentals of architecture. Writings, drawings, and buildings from throughout his career are examined, as well as more general topics related to design process and cultural setting.

Technology

Architecture A4111 Statics and strength of structures. **3 pts**

Mr. Webster.

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. Axial, bending, and torsional stresses.

Architecture A4123 Steel and timber technology. **3 pts**

Mr. McCormick.

Application of the principles of structural analysis and design to modern steel and timber construction. The mechanics and behavior of steel and timber members, including modern approaches for bending, compression, and composite elements. Use of A.I.S.C. handbooks and codes. An introduction to the use of computers in the analysis and design of steel and timber structures.

Architecture A4125 Reinforced concrete technology. **3 pts**

Mr. McCormick.

Application of the principles of structural analysis and design to modern reinforced concrete construction. The mechanics and behavior of reinforced concrete, including ultimate strength approaches for bending, compression, and prestressed concrete. Case studies include three laboratory demonstrations. Use of A.C.I. handbooks and codes. An introduction to the use of computers in the analysis and design of reinforced concrete structures.

Architecture A4220 Architecture and technology I. **3 pts**

Mr. Silman.

Lectures utilizing specific examples from the history of architecture illustrating a structurally rational point of view and emphasizing material selection as design determinant, building physics; fundamental structural systems; mechanical systems; high-rise construction; mass-production elements; specialized structures. Intended as a corollary to *Comprehensive studio I*.

Architecture A4221 Architecture and technology II. **3 pts**

Mr. Marino and staff.

A studio format course with supplementary lectures, readings, and field trips. Design problems, narrowly defined in order to focus on material and structural fundamentals, examine masonry and wood construction simultaneously from architectural and technological viewpoints. Upon completion, each project is subjected to formal critical design review. Intended as a corollary to *Comprehensive studio II*.

Architecture A4610 Architecture and technology III. **3 pts**

Mr. Marino and staff.

Continuation of A4221; studio format examination of steel and concrete construction. Intended as a corollary to *Comprehensive studio III*.

Architecture A4611 Architecture and technology IV. 3 pts
Mr. Garrison and staff.

A case-study course wherein exemplary built works are "deconstructed" using analytical drawing techniques in order to examine material, structural, and mechanical aspects of the design. Working drawing sets are used as information sources. Upon completion, each analysis is subjected to formal critical review. Intended as a corollary to *Comprehensive studio IV*.

Architecture A4619 Introduction to mechanical systems in buildings. 3 pts
Messrs. Gainfort and Evans.

An introduction to fundamentals of heating, ventilating, and air-conditioning systems as they are applied to buildings. Basic principles of energy flow, conservation, and control are coupled with information on basic HVAC systems. The emphasis on integration of these systems into, and their effects on, building design and construction. Lectures, case studies, and design project.

Architecture A4626 Architectural detailing. 3 pts
Mr. Rietveld.

Prerequisite: *Architecture A4220, A4221, A4610, and A4611.*

Lectures and studio detailing problems. Introduction to tectonic composition and the concept of constructive poetics. Students also detail a building that they have designed themselves. Discussion includes a broad range of considerations in architectural detailing from organizing documents for an entire project to resolution of selected individual problems. Emphasis placed on the practicality of details to achieve objectives of weatherability, durability, physical comfort, and economy of construction; and on whether the details maintain the spirit of the overall design conception.

Architecture A4628 Architectural acoustics. 3 pts
Mr. Harris.

Physical properties of sound. Reflection, absorption, and diffraction of sound waves. Sound absorptive materials and constructions. Principles of room acoustics; room resonance, diffusion of sound; the decay of sound in a room. Designing for optimum reverberation time. Acoustical defects in rooms and auditoriums and how to avoid them. The acoustical design of rooms, lecture halls, auditoriums, studios, and open-air theatres. Noise transmission in buildings. Noise control methods in HVAC systems, in electrical systems, and in piping systems. Control of airborne noise in buildings (walls, slabs, double-wall construction, doors and windows, enclosures, use of sound absorptive materials). Control of solid-borne noise in buildings.

Architecture A4637 Lighting and buildings. 3 pts
Mr. Prouse.

Lighting as an element in the overall design and construction process. Light and materials. Light and color. Specifying sources and luminaires. Daylighting, exterior lighting, and documentation of the design.

Architecture A6134 Architectural consequences of structural decisions. 3 pts
Mr. Salvadori.

Prerequisite: a knowledge of elementary steel, concrete, and wood structures. Basic concepts of structural behavior applied to the solution of practical problems with the specific purpose of determining the influence of structural decisions on architecture. Optimization of structure considered as a component of the architectural system. Considerations of economy, functionality, and practicality of construction in the search for proper architectural solutions. Large-span and high-rise structures as well as structures for modular buildings. Additional knowledge of advanced structures introduced when required for the solution of the problem at hand.

Visual Studies

Architecture A4503 Freehand drawing and analysis. 3 pts
Ms. Campani.

Lectures with studio assignments each week. Analytical and representational freehand drawing techniques taught and utilized: shade and shadow, texture, perspective, etc. with the intention of using drawing as an analytical method of investigating structure and form, construction, the joint, material.

Architecture A4509 Architectural drawing: projection and proportion. 3 pts

Mr. Malo and Mr. Ott.

Lectures with studio assignments each week.

Exercise of cognitive, technical, and aesthetic judgement in the development of skills of visual representation of three dimensional space by selective use and drawing practice of lines, planes, and solids. Topics: geometric generation of lines, orthographic projection on planes, stereometric representation and rotation of volumes, light on surfaces (shade and shadow), and fugal perspective.

Methods/Practice

Architecture A4405 Principles of urban design. 3 pts
Mr. Eckstut.

Open to degree candidates in architecture and architecture graduates. The external forces that impact the design of a building and, in turn, the forces through which the individual building impacts the urban context beyond its immediate site. Design of buildings considered with respect to the following: (a) large-scale design objectives such as land use, bulk, open space, and circulation; (b) coordination of a variety of vested interests instead of the traditional single client; (c) long-term development in phases. Consideration of architecture in terms of maximum public benefits instead of designing for the users of a building.

Architecture A4530 Computer concepts for the built environment. 3 pts
Messrs. McCormick and Tountas, and Ms. Wade.

A previous knowledge of computers is not required. An introduction to computer utilization in architecture with an emphasis on microcomputer applications (such as electronic worksheets, database management, graphics, communications, word processing, and integrated packages) and recent developments in mainframe computer graphics, editing systems, and text formatters. Both the potentials and limitations for computer usage in the profession are explored.

Architecture A4531 Computer applications for the built environment. 3 pts

Messrs. McCormick and Tountas, and Ms. Wade.

An introduction to a wide range of applications for the professional, including desk-top publishing, spreadsheets, databases, and computer-aided design. Demonstrations of how computer applications can contribute to each phase of an architectural/planning project, from market surveys and financial analysis, through design and drafting presentations to resource and project management.

Architecture A4535 Computer-aided design in architecture and preservation. 3 pts

Mr. Tountas.

A previous knowledge of computers is not required. An introduction to concepts, issues, and methods in computer-aided design. Topics include interactive and procedural

approaches, parametric design, and integration of spatial modelling with other information-processing activities. Emphasis is placed on the creation of two-dimensional models using the University's computer center, as well as the division's computer-aided design facility that includes several work stations, plotters, digitizers, etc.

Architecture A4536 Development and finance. 3 pts

Mr. Bell.

An introduction to economic decision making with regard to income-producing properties, through case study examinations of the effects of feasibility studies, political restraints, pioneering, financing, methods of leverage, taxation, and investment return. Successful and unsuccessful suburban and urban multifamily housing, shopping center, rehabilitation and renovation, and office building projects.

Architecture A4539 Advanced development and finance. 3 pts

Mr. Bell.

Prerequisite: *Architecture A4538.*

A continuation of the analysis of sophisticated "deal making." An examination of the economics and feasibility of condominium conversions, office and loft building conversions, hotel and motel operations, medical and specialized buildings, land acquisition, and restoration and rehabilitation. The general contractor; estimating and bidding. Pitfalls in leasing and management. Selected on-the-scene, in-depth economic evaluations of multi-family housing, shopping center, and office building complexes in the metropolitan area.

Architecture A4560 Professional practice. 3 pts

Mr. Segal.

Turning designs into buildings: General introduction to the business of architecture, covering architects' services to owners, contractors' services to owners, financial management of office and projects, and public constraints such as zoning and building codes.

Architecture A6900-A6901 Research I and II. 2 or 3 pts

The staff.

Either term may be taken separately.

Prerequisite: a project outline and the written permission of a faculty project supervisor. An introduction to the independent study of technical, scientific, and social aspects of architecture. Each student selects an area for investigation, plans an approach to his or her chosen subject matter, and develops an adequate presentation of 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.

Urban Design and Building Design

Architecture A6850 Urban design studio I. 9 pts

Mr. Eckstut and staff.

Introduction to urban design as the shaping of the public domain. The studio emphasizes the development of urban design concepts, exploring their implications into a fully realized design; students are encouraged to develop strategies which are also sensitive to the existing structure of the city. The studio is particularly concerned with the mediation between the scale of the city as a whole and the architectural scale; projects assigned address a range of scales, from the city, to the district, and down to the scale of the street and the individual square. Projects assigned in New York City; students are encouraged to define their own sites and design strategies.

Architecture A6851 Urban design studio II. 9 pts
Mr. Eckstut and staff.

Extension of previous design studio experience in light of the understanding provided by the support courses. Emphasis on the design of major interventions in more challenging site conditions, either because larger in scope or more difficult because it is fractured. As in the previous studio, students select their own project sites, establish site boundaries, and develop design strategies.

Architecture A6854, A6855 Building design studio I and II. 9 pts
The staff.

Aim is to provide an opportunity for qualified and experienced architects to bring design projects to a high degree of resolution and refinement. As far as possible, an attempt is made to restrict the subject matter to a specific topic with particularly strong urban and contextual implications. The procedure is one of continual design and re-design, while generally increasing the operative scale at which the study is progressively presented. Other short exercises are given during the two-term period.

Architecture A6864 Advanced theory seminar I. 3 pts
Mr. Frampton.

Aim is to examine the theoretical basis from which the main lines of current architectural practice have evolved. The content and subject matter vary, but in general this first seminar restricts itself to a study of theory either in the pre-history of the modern movement (1750-1900) or in the pioneer period of the twentieth century (1900-1950).

Architecture A6865 Advanced theory seminar II. 3 pts
Mr. Frampton.

Aim is to analyze a particular stream of architectural development in the 20th century. The mode of treatment varies. At times the focus is on the work of a particular architect; on other occasions the seminar is concerned with the evolution of a particular school or local movement.

Division of Urban Planning and Historic Preservation

Historic Preservation Program

Architecture A4210 Basic principles of traditional construction. 3 pts
Mr. Pokorny.

Designed to give the nonarchitecture student an introduction to the structural principles and building materials employed in traditional American structures of wood and masonry. Seminars supplemented by required reading and graphic exercises.

Architecture A4510 Design principles for preservation. 4 pts
Ms. Franke.

Basic design for preservationists including examination of existing architectural examples in terms of their physical, historical, and cultural context; their anatomy, both perceptual and conceptual; and their meanings. Development of skills in the observation of architecture ("seeing" what is there); the recording (graphic representation) of the perceptual phenomena; the analysis of these phenomena to discover the underlying concepts; and the architectural design principles and means employed to express these concepts.

Architecture A6310 History of landscape architecture. 3 pts
To be announced.

A survey of American landscape architecture from the 17th century to the present time, with reference to European precedents and parallels.

Architecture A6710 Building systems integration. 3 pts
Mr. Pokorny.

The introduction of new systems into old fabric, including structural, mechanical, electrical, intrusion detection, and fire detection and suppression systems. Problems of management and coordination, and analysis of existing systems as a basis for new work.

Architecture A6712 Architectural finishes in America from 1650 to 1950. 3 pts**Mr. Matero.**

Limited enrollment.

Prerequisite: *Architecture A6764* or the instructor's permission.

A study of historic architectural paints and related finishes employed in America. Emphasis on materials and application techniques as well as on practical analytical methods for the identification and restoration of historic architectural finishes. Field trips and individual research projects required.

Architecture A6723 Architecture of the American acropolis. 3 pts
Mr. Bluestone.

Investigation of the architecture and planning of the American civic landscape from the 17th to the 20th century. Consideration of the relationship between social and political attitudes toward government and the forms of public architecture. Subjects include the architecture of colonial public authority, federal architecture and planning in the early Republic, designs for national and state capitols and for city halls, City Beautiful efforts to reorder the civic and cultural landscape, and the 20th-century tensions between established canons of civic architecture and the forms of modernism.

Architecture A6724 Arcades, markets, and malls: history of retail architecture. 3 pts**Mr. Bluestone.**

Investigation of the changing forms of retail architecture in the context of the changing patterns of market exchange and retail consumption. With a survey of some European and non-American antecedents and forms, the focus is primarily upon American designs. The retail forms studied include 17th- and 18th-century markets and market fairs; 19th-century arcades, expositions, department stores, and skyscraper shops; and 20th-century suburban shopping centers, main street malls, and commercial and retail development of major rehabilitated structures. Investigation also of efforts by architects and builders to mediate between the street and the shop—the attempts to internalize the dynamics of the traditional public street within privately controlled structures.

Architecture A6730 American architecture before 1876. 3 pts
Mr. Bluestone.

Survey of American architecture from the 17th century to the centennial, with scrutiny of the relationship between social and cultural ideals and architectural style and form. Consideration of the influence of European high style on American building and the connection between high style and vernacular forms. Survey includes examples of domestic, religious, civic, commercial, and industrial architecture.

Architecture A6731 American architecture after 1876. 3 pts
Mr. Stern.

A continuation of *Architecture A6730*. Guiding ideals in American architecture from the centennial to around 1960. The evolution of modernism in America is contrasted with European developments and related to local variants.

Architecture A6732 American decorative arts. 3 pts**Mr. Stayton.**

Exploration of the stylistic and social changes in the decorative arts in America from the 17th to the 19th century. Although concentration is on furniture, other media such as silver, pewter, ceramics, and glass are also considered. Lectures cover the colonial and early federal periods; student projects are concentrated on 19th-century material.

Architecture A6734 The classical language and literature of architecture. 3 pts**Mr. Hewitt.**

A detailed review of the elements of the classical language of architecture and of the literature that propagated that language from the early 15th century through the mid-19th century. The classical orders as interpreted by architectural publications in Italy, Germany, France, England, and the United States, and architects and buildings influenced by these books.

Architecture A6738 Investigative techniques for historic structures. 3 pts**Mr. Matero.**

Prerequisite: *Architecture A6764* or the instructor's permission.

An introduction to field and laboratory techniques as preservation tools for the investigation and analysis of historic structures. Specific study topics include *in situ* paint investigation, nail chronology, dendrochronology, and x-ray investigation. Individual research contributing to a class field project is required.

Architecture A6739 Conservation seminar: stained glass. 3 pts**Ms. Sloan.**

Introduction to the problems posed in the conservation of American stained glass. Lectures cover the history of the craft and specific issues facing the conservator.

Architecture A6740 Theory and practice of historic preservation. 3 pts**Mr. Hewitt and staff.**

Enrollment restricted to preservation students.

An introduction to theoretical issues governing preservation practice. Students are expected to develop an individual point of view through group discussions. These relate to readings and lectures that are often controversial in nature. Such basic concepts as style and history are questioned, and selected examples of conservation, preservation design, and preservation planning are critically evaluated.

Architecture A6745 Documentation. 3 pts**Mr. Matero.**

The process and methods used to document historic structures. Familiarizes the student with the nongraphic methods of architectural research and analysis.

Architecture A6749 Historic preservation studio I. 4 pts**Mr. Hewitt.**

Design problems of restoration, adaptive use, and infill that introduce the student with previous design training to the special problems inherent in working with historic buildings and neighborhoods.

Architecture A6750 Historic preservation studio II. 4 pts**The staff.**

Students in design, history, conservation, and planning options work in groups to analyze and solve preservation problems in selected areas. Work with communities and neighborhoods in and around New York City is stressed.

Architecture A6751-A6753 Thesis I and II. 3 pts**The staff.**

Directed by an assigned faculty adviser, students prepare and defend a thesis in their area of major emphasis: history, conservation, or planning. Thesis guidelines issued during the spring term of the first year explain procedures in detail.

Architecture A6754 Special problems in preservation practice. 3 pts**The staff.**

Advanced problems in written and graphic skills related to preservation practice, such as those necessary for proposals, contracts, specifications, and public relations.

Architecture A6759 Politics of preservation. 3 pts**Ms. Longsworth.**

An overview of federal, state, and local government participation in historic preservation. Includes the history of preservation legislation, the current status of programs and policies, and possible future government actions.

Architecture A6760 History of North American building technology. 3 pts**Mr. Weaver.**

Major materials and techniques employed in American building before 1900.

Architecture A6761 Conservation seminar: masonry. 3 pts**Mr. Weiss.**

Current research in the identification, deterioration, and treatment of brick, stone, and cement/lime composites. Chemistry of cleaners and consolidants. Development of patching and repair methods, with an emphasis on field techniques. Field work in the New York area coordinated with masonry suppliers, contractors, and craftsmen.

Architecture A6762 Building pathology. 3 pts**Mr. Prudon.**

The deterioration of building materials and systems. Survey of methodologies for the investigation of physical conditions and structural configurations of historic buildings. Analysis and discussion of available implementation techniques for repair and restoration.

Architecture A6763 Advanced conservation science. 3 pts**Ms. Gale.**

Application of chemical instrumentation and advanced microscopy to the analysis of historic building fabric. Use of modern materials such as coatings, adhesives, biocides, and consolidants. Experimental approach to conservation treatments and to the fabrication of replica materials. Discussion of simulation and modeling of weathering processes.

Architecture A6764 Conservation science. 3 pts**Mr. Weiss.**

Scientific approach to the physical and chemical properties of traditional architectural materials. Interrelationship of long-term behavior with these characteristics. Physical analytical methods for the investigation of samples from historic structures. Introductory laboratory study of metals, masonry, paints, and wood.

Architecture A6766 American architecture colloquium. 3 pts**The staff.**

Prerequisite: the instructor's permission.

The investigation of a particular problem in American architecture through introductory lectures and detailed student reports. Typical problems include the influence of the pictur-

esque point of view in American architecture and American architecture between the two World Wars.

Architecture A6767 Preservation planning. 3 pts
Mr. Kwartler.

Practical and conceptual issues in preservation planning and the methods used to respond to them are examined. The legal and administrative structures and mandates of landmark commissions, historic district and landmark designation, zoning, environmental regulations, land use and urban design analyses, building quality analyses, tax incentives, methods and sources of financing, economics and marketing for adaptive re-use, and real estate and community involvement are reviewed in the context of case studies. Emphasis is placed on examining the conflicting aesthetic, historic, developmental, social, and preservation values implicit in different policy approaches.

Planning A6769 History of the American city. 3 pts
Ms. Wright.

For a complete description, see course listings under *Urban Planning—Electives*.

Architecture A6770 Issues of urban preservation. 3 pts
The staff.

Introduction to key issues of urban preservation, focusing on the work of municipal preservation commissions. Investigation into both theoretical and practical problems of survey, administration, and design. Involves class and field work.

Architecture A6772 Vernacular architecture. 3 pts
Ms. Wright.

Special problems in the history and preservation of vernacular architecture, such as the architectural evolution of the typical American "Main Street" from 1800 to 1950. Emphasis on the material history of a particular type, such as commercial buildings, and relation of this type to contemporary preservation practice.

Architecture A6774 Historic preservation studio III. 4 pts
The staff.

Advanced planning and design problems in preservation.

Architecture A6775 Historic preservation studio IV. 4 pts
Mr. Hewitt.

Advanced planning and design problems in preservation.

Architecture A6780 Preservation trade techniques. 3 pts
Ms. Anderson.

A practical introduction to the methods used by tradesmen who work in the field of historic preservation. Course instructors demonstrate the proper use of the tools and techniques of the preservation tradesman. Students, through workshop projects, are introduced to the basic hand skills of two or more trades.

Architecture A6782 Conservation seminar: wood. 3 pts
Mr. Weaver.

Current research in the identification, deterioration, and treatment of wood. Lectures on conservation case studies and student seminar presentations on conservation techniques.

Architecture A8790 Research problems. 2 or 3 pts
The staff.

Independent research in history, conservation, or planning.

Urban Planning Program

Core Courses

Planning A4208 Analytic methods A. 3 pts

Messrs. Bach and Jeffries.

An introduction to quantitative and qualitative techniques used by urban planners, policy analysts, public administrators, and social scientists. Topics include survey methodology, sampling, descriptive and inferential statistics, hypothesis testing, bivariate correlation and regression analysis, and techniques of population projection.

Planning A4206 Analytic methods B. 3 pts

Messrs. Bach and Jeffries.

Prerequisite: successful completion of *Planning A4208*.

A second course in analytic techniques for urban planners. Topics include introduction to computer usage, techniques of multiple regression and correlation analysis, factor analysis, introduction of econometrics, and mathematical approaches to planning.

Planning A6001 Introduction to urban planning theory. 3 pts

Mr. Sclar.

Lectures and discussions on the history and role of planning as a profession, history and planning theory, urban theory, and professional ethics.

Planning A6290 Workshop in planning skills. 3 pts

Ms. O'Keefe.

An intensive workshop to introduce the tools and skills of the planning profession. Topics include mapping, zoning, graphics, report writing, techniques of oral presentation, and sources of community data.

Planning A6911 Planning studio. 6 pts

The staff.

Work on actual planning projects in collaboration with and under the supervision of faculty members. Emphasis on project and program planning for community and other public service organizations with limited technical-assistance resources, and on policy analysis and policy planning for government agencies at the city and state levels. Field work, team consultation, and seminars.

Planning A6225 The planning process. 3 pts

Messrs. Grava and Burlage.

This course provides a focused summary of the planning curriculum, explores selected urban issues in some depth, and offers a bridge to practice for graduating students. A seminar format, with invited guests as appropriate, is employed to probe important questions in contemporary urbanization, where professional planners have a role to play. Topics change each year and are determined jointly prior to each semester.

Planning A6557 Race and ethnicity in the city. 3 pts

Mr. Jeffries.

Designed to investigate explicitly how race and ethnicity have been situated, in a methodological sense, within those disciplines that focus on the socio-economic, physical, spatial, and/or political aspects of urban environments. Among the principal topics discussed are: the origins of the social and scientific definitions of race and ethnicity; how those definitions influence public policy formation and debate; and divergent interpretations of the effects of planning, public policy, and urban design on different racial and ethnic groups.

Planning A4112 Physical structure of cities. 3 pts**Mr. Grava.**

A discussion devoted to an understanding of the urban physical system, what it is, how it came about, and some of the general theories that purport to explain its form and function. Historical comparative analysis—from Paleolithic villages to the new town movement—of the form of cities as a product of political, economic, and social forces. Discussion of some major theorists on urban form and design. An exploration of the basic concepts of urban morphology and their relationships to the contemporary urban/metropolitan situation. A review of planning tasks for selected types of city districts. The planning approaches in some countries not following the American model.

Planning A4151 Foundations of urban economic analysis. 3 pts**Ms. Sassen.**

Formal background in economics is not required. A review of the basic concepts and methods of urban economics, with a major emphasis on location and land-use economics. Examination of both equilibrium-based models and the new critical models derived from analyses of the production process and spatial organization.

Planning A6850 Research design. 3 pts**Mr. Downs.**

Objective is to guide students through the preliminary stages of thesis preparation. A series of lectures and discussions assist in selecting a thesis topic, forming a researchable hypothesis, and devising a suitable research design. Assignments are carefully tailored to meet individual needs.

Planning A6918 Thesis workshop. 3 or 6 pts**The staff.**

Objective is to guide students through the final stages of thesis preparation and defense, through reviews by peers, faculty members, and practicing professionals, to assist in presenting and synthesizing research findings.

Planning A6052 Planning law and administration. 3 pts**Mr. Marcuse.**

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 and public development. Limitations on public powers; due process and discrimination. Emphasis is on basic principles of constitutional law and on the interrelationships of legislation, administration, and litigation.

Planning A6217 Techniques of project evaluation. 3 pts**Mr. Grava.**

A selective review of the major evaluation techniques in the fields of urban planning and urban policy analysis; cost-benefit and cost-effectiveness analysis; PPBS; optimization, goal achievement, scenarios, and delphi procedures; metropolitan plan evaluation methods; simulation; sensitivity analysis; social experiments. Examination of theoretical issues and of the context and problems that define and constrain urban planning and program evaluation. Review of evaluation studies of various public works projects, development efforts, and services delivery.

Sectors

Developing Countries

Planning A4510 Planning in socialist nations. 3 pts**To be announced.**

Investigation of the impact of socialism on the planning process. Place of planning in socialism and preconditions to planning as set up by the socialist ideology. Focus on case

studies illustrating various types of socialism, as applied political systems, and their influence on the definition of goals, the setting of priorities, the means of control, and the record in implementation.

Planning A4602 The context of planning in developing nations. 3 pts
To be announced.

Exploration and critique of development planning theories and concepts as a means to define the problematics of development choices for Third World nations. The implications to planning of constraints of specific geographical areas and ideological goals serve to highlight the recurrent themes of "another development," i.e., basic needs, appropriate technology, cultural integrity, and popular participation.

Planning A4609 Urban planning problems in developing countries. 3 pts

Mr. Downs.

A survey of basic issues in urban planning in developing countries. Focus on the roots and physical and social results of contemporary urbanization, the role of cities in development, and centralization and urban bias, together with consideration of alternative policies and programs.

Planning A4616 Housing in developing countries. 3 pts

Mr. Sierra.

The impact of urban population growth and rapid urbanization on housing and urban development; the demand for shelter and services for the urban poor; the phenomenon of squatting and squatter-built housing; comparison of government policies and programs addressing urbanization and housing conditions.

Planning A4618 Seminar in planning in developing countries. 3 pts

Mr. Downs.

Prerequisite: the instructor's permission.

Advanced topical seminar in planning issues and experience in developing countries.

Planning A4628 Planning institutions and development. 3 pts

Mr. Downs.

The institutional organization of planning greatly constrains both its process and outcome. Alternative structures give different priorities to various sets of problems, policies, actors, resources, and implementation mechanisms. Focus is on understanding and harnessing the dynamics and potential of the interdependent conflicting roles of institutions in planning and development.

Planning A4635 Data collection and analysis for planning. 3 pts

Mr. Downs.

Decision making in urban planning and management should be based on sufficient factual information. In many situations, especially in developing countries, data traditionally required are not fully available, and resources may be insufficient to collect the needed data. This course is an exploration of indicators, data collection, and analytic and decision procedures suitable under conditions of insufficient data and resources.

Planning A4750 Infrastructure of cities in the Third World. 3 pts
Mr. Grava.

Objective is to explore advanced and traditional technical systems that are useful in making cities—particularly large ones—in developing countries more healthful, tolerable, livable, and perhaps pleasurable. Discussion encompasses settlement patterns, energy and communications, streets, paratransit and regular transportation services, water supply, sewerage, solid waste disposal, and other services. The operations of several cities and metropolitan areas are analyzed. The orientation is to match service capabilities of systems with local resources and perceived needs.

Health and Human Services Planning

Planning A4512 Health services planning and programming. 3 pts
Mr. Burlage.

Familiarization with concepts related to definitions of physical and mental health, to methodologies for analysis of need for and supply of health services, to available techniques for relating policies to plans, to programs for the planning of health services in operational terms that are susceptible to evaluation. Uses of urban planning and analysis for health and health services. Field work from the perspectives of the provider and the client at the neighborhood, municipal, and regional levels.

Planning A4515 Issues in urban health. 1 pt
Mr. Burlage.

A seminar series featuring outside speakers concerned with current debates in health and urban policy and planning.

Planning A4530 Intergovernmental social planning and community development. 3 pts

Mr. Burlage.
 Changing intergovernmental fiscal and infrastructure planning network. Public services development and delivery at the local level; relation of decentralized health and social services delivery planning, and comprehensive, land-use-oriented planning; health and social-environmental considerations; innovations in employment and management policies. Alternatives for decentralized public service planning.

Planning A4617 Urban development and health in developing countries. 3 pts

Instructor to be announced.

Unique problems of health conditions and human services needs result from large-scale migration, population concentration, urbanization, and industrialization. This course is a critical examination of the range of contemporary problems and the interdisciplinary methods and experiences of planning, evaluation, and implementation.

Planning A6510 Advanced planning and design for health care delivery systems. 3 pts

Mr. Parker.

Review of advanced concepts in the design and planning of health facilities. Exploration of current dynamics in the health care delivery system in relation to the latest institutional and corporate strategic plans and assessment of potential future delivery models relative to market demands, facility needs, and public policy.

Planning A6513 Health and human services research seminar. 3 pts

Mr. Burlage.

Exploration of changing social planning concepts, services sector problems, and institutional forces, with detailed examination of evolving health system planning context, emphasizing emerging and alternative frameworks and roles on the community, municipal, regional, and federal levels.

Public Health P6012 Health, poverty, and the low income consumer. 1 pt

For a complete description, see the bulletin of the School of Public Health.

Public Health P6518 Health facilities planning and design. 3 pts
 For a complete description, see the bulletin of the School of Public Health.

Public Health P6540 Dynamics in health planning administration. 3 pts
 For a complete description, see the bulletin of the School of Public Health.

Public Health P6544-P6545 Health care financial management I and II. 3 pts
For a complete description, see the bulletin of the School of Public Health.

Public Health P8070 Workshop on international health administration and planning issues. 1 pt
The staff.

A three-day intensive orientation course offered annually in mid-spring with public health, international affairs, and urban planning faculty members.

Social Work T6707 The politics of social welfare policy. 3 pts
For a complete description, see the bulletin of the School of Social Work.

Social Work T6801 Social welfare policy. 3 pts
For a complete description, see the bulletin of the School of Social Work.

Social Work T6807 Social policy and health care. 3 pts
For a complete description, see the bulletin of the School of Social Work.

Housing

Planning A4304 Introduction to housing. 3 pts
Mr. Marcuse.

This course or the equivalent is prerequisite to other courses in housing and community development.

A fundamental understanding of housing in its social and economic aspects. Emphasis on the nature of the housing problem, the dynamics of the housing market, the history and current status of government attempts at intervention in the market, and housing's place in resolving the major public issues of poverty, segregation, and urban growth and decay. Theory and analytic method are stressed.

Planning A4308 The determinants of housing policy. 3 pts
Mr. Marcuse.

Prerequisite: *Planning A4304* or the instructor's permission.
How governmental housing policy is formed: political, social, economic, physical, technological, ideological components. Alternate explanations of policy formation: philanthropic, fiscal, interest group, structural, and other theories. Emphasis on history of housing policy in the United States and comparisons with other countries' policy evolution.

Planning A4312 Real estate finance I: capital markets. 3 pts
Mr. Laven.

For a complete description, see listing under Real Estate Development.

Planning A4345 European housing problems and policies. 3 pts
Mr. Marcuse.

Analysis of current housing problems and policies in Western Europe. The historical evolution and political, social, and economic context of these housing policies are examined and contrasted with policies in the United States.

Planning A4537 Urban housing policies: design and evaluation. 3 pts
Mr. Marcuse.

A range of existing and proposed policies are examined to analyze the ways in which their components were developed, how they do (or would) function in the actual context of the urban housing market, and what evaluation might be made of their results. The focus is on innovative and/or controversial policies currently in debate, including, but not limited to,

housing trust funds, 80/20 moderate/low income construction, rent control reforms, tax abatements, zoning incentives, condominium conversion regulations, housing court procedures, tax foreclosures, and secondary mortgage arrangements.

Planning A6344 Seminar in housing policy. 3 pts
Mr. Marcuse.

Prerequisite: *Planning A4304* or the instructor's permission.
 Exploration of the major social, economic, and political issues confronting contemporary American housing policy. Examination in a small working-group setting of alternative policy approaches to racial and economic segregation, abandonment and residential decay, urban growth, forms of public subsidy, balancing rights of ownership with those of occupancy, etc. A significant research effort is required.

Planning A4616 Housing in developing nations. 3 pts
Mr. Sierra.

For a complete description, see listing under *Planning—Developing Countries*.

Planning A4538 The development process I. 3 pts
Mr. Bell.

For a complete description, see listing under *Real Estate Development*.

Physical Planning and Infrastructure Development

Planning A4404 Urban transportation planning. 3 pts
Mr. Grava.

Review of contemporary urban transportation issues and suggested solutions. Examination of the characteristics of various modes of movement and the interdependencies among them. Appropriate analytical techniques for each mode are discussed. The transportation planning process, with its component analyses of the supply and demand functions of movement systems, is the core of the course. Selected transportation facilities are reviewed.

Planning A4540 Environmental planning. 3 pts
Ms. Allee.

Objective is to provide means for understanding the environmental, regulatory, and planning process, and its relationship to development planning and design. Through actual preparation of an EIS under New York City regulations, students learn how environmental concerns compete with developer objectives and public policy—and what tradeoffs or compromises must be made before the project is completed.

Planning A4706 Infrastructure and the physical environment. 3 pts
Mr. Grava.

A review of the studies and surveys leading to the development and construction of various physical service/infrastructure systems, as well as a discussion of their components and service capabilities. This includes planimetric and photogrammetric surveys, land description, soils analyses, street engineering, water supply, sewerage, drainage, and solid waste management. Short exercises under each. In all cases the planning dimensions at the municipal and regional levels are emphasized. The overall aim is to give practical skills to the urban planner allowing constructive participation in the building of a livable environment.

Planning A4714 Legislating aesthetics. 3 pts
Mr. Kwartler.

Focus on the issues concerning the constitutional, social, and philosophical bases for legislation that achieves aesthetic purposes in its regulation of real property. The legislative and administrative structures of historic preservation, zoning and subdivision regulations, housing codes, environmental protection, and private covenants are examined through case studies and case law.

Planning A4730 Land use in urban areas. 3 pts**Mr. Buckhurst.**

An introduction to site planning, layout, design standards, and general guidelines for the major land use elements found in urban areas. Examination of public and institutional land uses—housing, industrial, commercial, transportation, recreation and open space—in a variety of cities.

Planning A6434 Transportation issues seminar. 3 pts**Mr. Grava.**

Prerequisite: *Planning A4404* or the instructor's permission.

Discussion of major issues in transportation at several levels, from national to local, and covering the economic, political, and social implications of decision making in transportation. Current topics and case studies are investigated.

Urban Economic Development

Planning A4312 Real estate finance I: capital markets. 3 pts**Mr. Laven.**

For a complete description, see listing under Real Estate Development.

Planning A4507 Urban economic development policy. 3 pts**Mr. Jeffries.**

Prerequisite: *Planning A4151* or the instructor's permission. Examination of the political economy of urban economic development in large, mature American cities, including the history of urban economic development, alternative theories and analytic techniques, the role of federal and local public policies, and prospects for the economic future of older cities in an increasingly interdependent world economy.

Planning A4509 Community-based economic development. 3 pts**Messrs. Schaffer and Jeffries.**

Examination of the sources of divergence between national economic performance and economic conditions at the community level. The private and social costs of uneven development are explored, along with proposals for improving local economic performance. Detailed case studies evaluate community development corporations, enterprise zones, tax policy, public-private partnerships, and other development mechanisms.

Planning A4546 Theories of urban economic and spatial development. 3 pts**Ms. Sassen.**

Examination of the major theories and the relevant evidence. A major focus is on the new spatial division of labor and on the place of different types of cities in the global and in regional economic systems. Issues discussed include changes in the economic bases of cities in the U.S. and in Third World countries, changes in the linkages within urban systems, regional growth models, the migration of capital and labor, and uneven development.

Planning A4560 The economics of urban land use. 3 pts**Mr. Sclar.**

Prerequisite: *Planning A4151* or the instructor's permission.

A detailed review of the economics of land use in urban areas with particular emphasis on the relationship between land use controls and real estate development. Topics include the economics of land value, zoning, development rights transfers, historic designation, real property taxation, and the economic impacts of alternative transportation policies.

Planning A6550 Urban labor markets. 3 pts**Ms. Sassen.**

Examination of theories of the labor market, their policy implications, and the evidence. A major focus is on current developments in large cities, including the growth of immigrant

labor markets, informalization, and new forms of regulating labor market attachment. Examination of evidence both for the U.S. and Third World cities.

Electives

Architecture A4530 Computer concepts for the built environment.

3 pts

Ms. Wade, Messrs. McCormick and Tountas.

An introduction to basic computer terminology, equipment, use, and programming languages and packages. A survey of computer applications in urban planning, preservation, and architecture, including data-handling, file structure and design, and methods of computer graphics and mapping. The Center for Computing Activities' DEC-20 and microcomputers are used.

Planning A4230 Thematic mapping and statistical graphics for the built environment.

3 pts

Ms. Wade.

Computer programming with Statistical Analysis Systems (SAS), a statistical analysis package, with an emphasis on applications to the built environment. Focus on data preparation, manipulation, and creating informational images with charts and maps. The Center for Computing Activities' IBM system and microcomputers are used.

Planning A4335 Planning New York City.

3 pts

Mr. Wagner.

Focus on the major institutional entities in the public sector that plan the built environment of New York City, including the City Planning Commission and other municipal agencies, neighborhood bodies such as community boards, and regional public authorities such as the Port Authority of New York and New Jersey. The historical origins, current operations, and future roles of each institutional entity are examined. Emphasis is on the public-private interactions that determine the shape of New York City.

Planning A4340 Comparative European urban social policy.

3 pts

Mr. Marcuse.

Social policies in advanced industrialized private-market countries have shown striking parallels and significant divergences. This course is an examination of the reasons for each, with an attempt to understand the causes for the adoption of specific policies. Topics include issues of unemployment, welfare, housing, urban development, and social security.

Planning A6220 Systems concepts in urban planning.

3 pts

Mr. Grava.

Specific mathematical or computer-use knowledge is not required.

Theory of decision making, drawing from general systems theory and advanced simulation and evaluation techniques and applying this knowledge primarily to the urban situation. "Systemic planning" as a procedural approach combining scientific methodology with urban concerns and as one of the theoretical paths available to decision makers generally and urban professionals specifically. Contrasts and similarities with other theories. Major cases, particularly those related to urban management and organization issues.

Planning A6354 Political environment of development.

3 pts

For course description, see listing on the following page.

Planning A6769 History of the American city.

3 pts

Ms. Wright.

The process of continuity and change in American cities from the colonial period through the 20th century, covering industrialization, political conflict, reform movements, geo-

graphical and ethnic diversity, bureaucratic rationalism, and urban culture—with focus on how physical form responded to or influenced social and political forces over time.

Planning A6925-A6926 Advanced research I and II. 3 pts
The staff.

Either term may be taken separately.

Prerequisite: a project outline and the written permission of a faculty project supervisor. Individual or small-group research in consultation with a faculty member, in areas of the student's choice. Students are responsible for planning and conducting research activities and enlisting the cooperation of a faculty adviser.

Planning A8900-A8901 Doctoral research colloquium. 3 pts
Mr. Sclar.

Open only to Ph.D. degree candidates in planning or in closely related fields. Discussion to center on advanced planning theory and on contemporary cases with methodological, conceptual, or policy implications, the specific format and subjects to be determined by the group.

Architecture A4330 and A4331 Urban history I and II. 3 pts
For a complete description, see listing under *Division of Architecture—History/Theory*.

Real Estate Development Program

Planning A4312 Real estate finance I: capital markets. 3 pts
Mr. Laven.

Introduction to capital markets and methods of financial analysis of real estate investments. Topics include measures of value, capitalization rates, capital budgeting, debt and equity markets, taxation, and cash flow and appraisal techniques.

Planning A4314 Real estate finance II: advanced financial packaging. 3 pts
Mr. Laven.

Advanced financial analysis and appraisal techniques for real estate development. Topics include complex deal structuring, innovations in debt financing, syndications, tax shelters, tax-exempt financing, and microcomputer applications.

Planning A4538 The development process I: concept to completion. 3 pts
Mr. Bell.

Detailed analysis of the components of the real estate development process and the functions of the key participants. Topics include techniques for selecting, organizing, and managing the development team; scheduling and risk management; negotiating strategies; utilizing government financing and subsidy programs; and marketing and managing completed projects.

Planning A4545 The development process II: public-private nexus. 3 pts
Mr. Bell.

Topics include tax assessment procedures and appeals, utilizing government financing and subsidy programs, negotiating public-private partnership, working with public benefit corporations and nonprofit sponsors, and large-scale developments.

Planning A6330 Site planning and support systems for development. 3 pts
Mr. Grava.

Basic techniques of site planning and review of infrastructure systems such as access, utilities, telecommunications, and pedestrian amenities. Topics include the physical contexts of development sites, feasibility studies, and infrastructure requirements.

Planning A6332 Legal environment of development. 3 pts**Mr. Selver.**

Fundamentals of land use law and zoning that define the legal context of the development process. Topics include contracting law, mortgage instruments, secured interests, forms of property ownership, labor laws, and zoning regulations.

Planning A6350 Design for development. 3 pts**Mr. Kwartler.**

Basic principles of architectural and urban design and the relationship between the developer and the architect. Topics include building subsystems, relationship between form and function, special zoning techniques, and large-scale project design.

Planning A6352 Market analysis for development. 3 pts**Mr. Shorter.**

Critical factors in national, regional, and urban real estate markets that determine development opportunities. Topics include business and construction cycles, regional and urban growth trends, restructuring of urban space, commercial and industrial location theories, and demographic analysis and projection techniques.

Planning A6354 Political environment of development. 3 pts**Messrs. Frucher and Sclar.**

Analysis of the political issues and conflicts influencing development. Topics include public laws influencing development, interest group politics, public approval processes, impacts of development on population groups and communities, and the competing equity claims of different members of society.

Planning A6356 Construction technology and management. 3 pts**Messrs. Fischer and Silvermand.**

An overview of alternative technologies, the construction process, and construction management. Topics include cost estimating; scheduling and management techniques; contract documents; bidding; changes, extras, and claims; and community, public agency, and labor relations.

Admission

OFFICE OF ARCHITECTURE ADMISSIONS: 400 Avery
Telephone (212) 280-3510

Admission Procedure

Application packets will be sent by the Office of Admissions upon receipt of the application form, part I, in the back of this bulletin. They should be completed in accordance with the instructions accompanying them. It is the applicant's responsibility to collect all the supporting materials (transcripts and letters of recommendation) and to submit them sealed in the envelopes provided. 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 and all supporting material for the Master of Architecture program must be received by January 15. Scholarship applications must be received by the same date. No late applications will be accepted for the M.Arch. program.

For applications to all other programs the deadline is February 15.

There are no spring term admissions.

For Special Students

Autumn term: Applications must be received by July 31.

Spring term: Applications must be received by December 15.

For the Shape of Two Cities: New York/Paris (for undergraduates):

Application deadline: March 15

No application is 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 or she has requested and submitted have been received prior to the deadline for receipt of applications.

Deposit

Admissions decisions are mailed on April 1. An applicant who has been accepted for admission as a degree candidate is required to pay a \$500 deposit to the University within fifteen days after the notice of acceptance. This deposit is applied

toward tuition when the applicant registers; if the applicant does not register, the deposit is not refunded. Credit for the deposit may be extended for twelve months when an applicant fails to register because of illness or other causes beyond the applicant's control. Proof of any extenuating circumstances may be required.

If the fee is not paid within fifteen days after receiving the notice of acceptance, the applicant forfeits the place in the School that has been reserved for him or her.

An applicant who does not accept his or her place in the School for the year admitted can reactivate the application for the following year by writing to the Office of Admissions before the admissions deadline. Readmission is not automatic.

Master of Architecture Degree (six terms)

Policy Regarding Admissions and Prerequisites

Eligibility

The M. Arch. program at Columbia is for the first professional degree in architecture; therefore, students who already hold a professional degree (such as the B. Arch. degree) are not eligible to apply to the program. Students who have studied architecture in nonprofessional programs (such as a four-year program in architecture) may apply, with the possibility of obtaining advanced standing for such course work. Prior architectural study is not a requirement. Regardless of prior experience, all students fill out the same application forms and send supporting materials (as described below). Applications and all supporting materials are due on January 15. Students are admitted to the M. Arch. program for the autumn term only.

Academic Preparation

1. All applicants must have, at the time of first registration, an undergraduate degree or the equivalent from an accredited college or university. Applicants are required to take the Aptitude Test of the Graduate Record Examination. Information may be obtained from the Graduate Record Examination, Educational Testing Service, Box 955, Princeton, N.J. 08540.
2. Applicants who have no prior background in architecture must complete a 3-point course in architectural graphic presentation as a prerequisite for the Comprehensive Studio Sequence, before first registration in the M. Arch. program.

Some students who are required to take the course are officially notified in their letters of admission, which are sent out on April 1.

3. To fulfill the prerequisite for the History/Theory Course Sequence all applicants must have completed a 3-point survey course in architectural history dealing with any of the following periods: classical to Renaissance, Renaissance to modern, or modern. The following course, which is offered by the

Columbia University Summer Session, is acceptable for fulfillment of this prerequisite:

S3320W Issues in architectural theory and history 3 pts

Candidates who have not yet successfully completed the above academic prerequisites at the time of application are eligible for admission into the M. Arch. program. However, their admission into the program is conditional on the successful completion of the prerequisites before the first registration in September. They will be notified in their admission letter on April 1.

If the history/theory prerequisite course is taken at another college or university, after admission to the M. Arch. program, prior approval must be obtained by sending, during the summer, course titles and descriptions to the Dean of Admissions. The credit for these courses must be recorded by transcript at the above office as soon as possible, but before September 1. The points for these courses are *not* applicable to the M. Arch. degree.

Applicants are *strongly advised* but not required to complete the following non-mandatory course work: one term of general physics (with laboratory) and one term of studio in the visual arts (drawing, painting, or sculpture). In addition, a reading knowledge of a modern foreign language, a course in environmental studies, and additional courses in architectural history are recommended.

Additional information regarding courses offered in the Columbia University Summer Session may be obtained by writing to Office of the Summer Session, 303 Lewisohn, Columbia University, New York, N.Y. 10027.

Students in need of financial aid may use part of their student loans for the Columbia Summer Session courses. (See *Financial Aid—Loans*.)

Portfolio

In addition to the application form and supporting documents, applicants must submit a portfolio showing evidence of their visual acuity and graphic abilities: paintings, drawings, prints, graphic designs, or architectural drawings. It is recommended that evidence of freehand drawing skills be included. Submitted materials, either original work or reproductions of the originals, should not exceed 8½ by 11 inches and should not measure more than ½ inch in thickness. The pages should not be placed in a ring binder and each page must be clearly marked with the applicant's name. Please do not send slides.

The material is returned by mail only if sufficient postage is included, and the return address clearly indicated.

Placement into Studio Sequence

Students who are admitted into the M. Arch. program are informed in their letters of admission of the level at which they will enter the Comprehensive Studio Sequence. Based on the evidence submitted in the portfolio, the student's status in relation to the prerequisites and requirements of the studio sequence is determined. Students may be required to take the studio prerequisite, *S1020D*—

Architectural representation: introduction, at Columbia during the summer. A limited number of students may receive advanced standing points for *A4001* and *A4002—Comprehensive studio*, thereby reducing the required studio sequence to two years. After the student's status has been determined by the M.Arch. Committee on Admission, it is not subject to further review by the Graduate School of Architecture, Planning, and Preservation. No subsequent petitions for advanced standing in design studio sources are considered.

Transferring Academic Credit

Students who have completed acceptable architecture course work prior to entering the M.Arch. program may apply for advanced standing credit or course waivers in nonstudio courses. No requests for advanced standing credit are considered until official copies of relevant transcripts have been submitted to the Office of Architecture Admissions.

Information regarding procedure for students who wish to petition for advanced standing or course waiver is available at the time of first registration in September. Students may receive the approvals from faculty or chairmen at any time after enrollment. Official transfer of credit by the Columbia University Registrar, however, cannot be accomplished until one year of full-time enrollment in the M.Arch. program. Advanced standing forms are available in the Office of the Dean of Admissions and should be returned there for review.

Petitions for advanced standing credit in nonstudio courses are normally reviewed by a faculty member teaching the equivalent course within the Graduate School of Architecture, Planning, and Preservation. For cases in which no equivalent course is offered at Columbia, the petition is reviewed by the chairman of the Division of Architecture. Advanced standing credit is awarded only for courses in which students have received a grade of C or better. In some cases, faculty members may ask to see examples of previous course work. Students are advised to have course descriptions and previous course work on hand at September registration to facilitate planning an academic program with an adviser. Required courses may be waived on the basis of professional experience or examination in subject matter. Because waivers do not carry point or course credit, elective courses may be taken to fulfill the credit requirements for the M.Arch. degree. All students must complete a minimum of 72 (out of a total of 108) points of course work at Columbia to obtain the Master of Architecture degree.

The Five-Year M.Arch. Curriculum—Work/Study

Many qualified applicants for the M.Arch. degree do not have available the tuition and time required to attend full time. A work/study option has been initiated, offering such students the opportunity to undertake graduate work while maintaining employment during most of the program.

The full-time program leading to the M.Arch. degree normally requires three years of study and includes 108 points of academic credit. Students in the Work/Study Program are able to complete the same requirements in five years as follows: one year of full-time study followed by four years of part-time study.

Professional Option Plan

The University provides opportunities for students in the School of General Studies to obtain their B.A. or B.S. degrees while completing the first year of the M.Arch. program in the Graduate School of Architecture, Planning, and Preservation. Since the details differ in each undergraduate division, students should consult the bulletins of the particular divisions in which they will be or are registered. Similar programs are available to or may be arranged for students enrolled in other colleges.

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

Joint Degree Program in Architecture and Urban Planning

For further information, see *Division of Urban Planning and Historic Preservation—Joint Degree Programs under Master of Science Degree in Urban Planning*.

Joint Degree Program in Architecture and Historic Preservation

For further information see *Division of Urban Planning and Historic Preservation—Joint Degree Programs under Master of Science Degree in Urban Planning*.

Master of Science Degrees in Architecture, Building Design, and Urban Design (two terms)

All applicants for admission to the programs leading to the M.S. degrees in architecture and building design and in architecture and urban design must have a B.Arch. or M.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. The portfolio should not exceed 8½ by 11 inches and should be submitted with the application. The portfolio will be returned by mail only if sufficient postage and packaging are included and if the return address is indicated on the portfolio. The Graduate Record Examination is *not* required.

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

Master of Science Degree in Historic Preservation (four terms)

Applicants for admission to the program leading to the M.S. degree in historic preservation must hold a first degree in architecture, landscape architecture, art

history, American studies, history, or other related fields. It is required that candidates holding nonarchitectural degrees take a course in architectural drafting. Drafting courses are generally available in vocational and community colleges. The course does not carry credit toward the M.S. degree. All applicants are required to take the Aptitude Test of the Graduate Record Examination.

It is also strongly recommended that students who have little or no background in the history of architecture take the equivalent of two terms of the history of architecture or prepare themselves by reading books on basic architectural history. (A reading list is provided on request.)

Applicants may enter only in the autumn term.

Master of Science Degree in Real Estate Development (two terms)

Applicants for admission to the program leading to the M.S. degree in real estate development may hold degrees in a range of fields. While academic preparation in development-related disciplines such as economics, business, law, engineering, historic preservation, architecture, and urban planning is highly desirable, it is not essential for admission to the program. In addition to submitting the normal application material, students are required to take the Aptitude Test of the Graduate Record Examination.

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. A course in statistics and one in economics, sociology, or political science (preferably related to urban issues) are recommended before entrance into the program. Courses in all three social sciences are recommended.

All applicants 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 the Graduate Record Examination, Educational Testing Service, Box 955, Princeton, New Jersey 08540.

Joint Degree Programs in Urban Planning and Other Disciplines

For descriptions of these programs see *Division of Urban Planning and Historic Preservation—Joint Degree Programs under Master of Science Degree in Urban Planning*.

The Shape of Two Cities: New York/Paris (Special Undergraduate Program)

This program is designed for students who have completed their sophomore year at an accredited college or university. Previous study in architecture, planning, or preservation is not required. Applicants must have the written support of their home institutions.

To apply for admission, the student should submit the following materials to the Office of Admissions: application form, official transcript of academic record, letter of recommendation from the major adviser or an academic dean supporting the application to the program and attesting to the student's ability to live and study abroad, and a \$35 nonrefundable application fee in a check or money order payable to Columbia University.

Special Students

Under certain circumstances professionals in fields related to architecture may be eligible to take courses in the Graduate School of Architecture, Planning, and Preservation. These students must receive permission from the Office of the Associate Dean for Admissions in order to obtain admission as *special students* (nondegree candidates). Many courses, including the design studios, are not open to special students.

If at a later date a special student wishes to apply for matriculation in either the M.Arch. or M.S. degree programs, the student must file a formal application before the stipulated deadline. The Admissions Committee does not treat the applicant preferentially.

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.

Summer Session

Certain introductory courses are available to students during the Summer Session. Those interested in applying should contact the Office of Summer Session Admissions, 303 Lewisohn (telephone 280-2752) for bulletins and application forms.

International Students

In general, only those international students (1) who can understand rapid idiomatic English and can speak, write, and read English with a high degree of facility and (2) who can prove their ability to support themselves financially while in the United States are eligible for admission to Columbia. For a single student, a minimum of \$19,000 for living and tuition expenses for each academic year (early September to mid-May), plus travel money, is considered essential. Since an international student holding a student visa (F) or exchange visa (J) is required

by the United States Immigration and Naturalization Service to carry a full program of study, students should not plan to depend on income from outside employment.

Students whose native language is not English or who did not receive their education in an English-speaking country should make arrangements to take the Test of English as a Foreign Language (TOEFL). Inquiries about this test, which is administered four times annually throughout the world, should be addressed to TOEFL, Educational Testing Service, Box 899, Princeton, New Jersey 08540, U.S.A. Applicants are urged to make arrangements to take either the November or the February examination.

All applicants who are admitted to Columbia and whose first language is not English, or who received their secondary or university education in countries where English is not the native language are, unless specifically exempted by the Office of International Student Admissions, required to take Columbia University's English Language Placement Test—even if they have taken the TOEFL. Students who do not meet the standards of the University may be required to take English language courses before beginning or in conjunction with their programs of study. No point credit is given for these courses, and students should bear in mind the possibility that their periods of study in the United States may be lengthened by their need to gain the required proficiency in English. Provision should therefore be made for the additional living and tuition expenses that may have to be met.

Students Applying from within the United States

Students applying from within the United States, whether nonimmigrants or immigrants (permanent residents), should follow the standard application procedures.

If applying from outside the New York City area, students whose native language is not English or who did not receive their education in an English-speaking country should make arrangements to take the Test of English as a Foreign Language (TOEFL). Inquiries about this test, which is administered four times annually throughout the world, should be addressed to TOEFL, Educational Testing Service, Box 899, Princeton, New Jersey 08540. Applicants are urged to make arrangements to take either the November or the February examination.

If applying from within or near the New York City area, students should make an appointment with an adviser in the International Student Office, 208 Lewisohn, Columbia University, New York, N.Y. 10027 (telephone [212] 280-3587). They then must take the English Language Placement Test (in lieu of the TOEFL), unless exempted by this office.

Financial Aid for International Students

The Graduate School of Architecture, Planning, and Preservation does not provide financial aid for international students.

Students needing financial aid who reside in countries that have a United States Educational (Fulbright) Commission should apply through the Commission.

Information about the Commission and about Fulbright grants (both travel and full-support grants) may be obtained from the nearest United States Embassy, Consulate, or Information Service. Students in Great Britain who wish to request financial aid should apply through the English-Speaking Union, 37 Charles Street, London, W1X8AB, England.

Orientation Program for New International Students

The International Student Office orientation program for new international students takes place during orientation week. For further information, consult the Office of the International Student Adviser, 208 Lewisohn; telephone (212) 280-3591.

Students who are required to take the English Language Placement Test should do so as early as possible. The test can be taken during the last week of August. Test schedules are available in 505 Lewisohn.

The staff of the Office of the International Student Adviser, 208 Lewisohn, provides advice and counseling to international students on such matters as housing, personal and financial problems, and regulations of the United States Immigration and Naturalization Service (visas, extensions of stay, work permission, temporary departure from the United States, transfer from Columbia to another school, termination of study). Information about the various international student clubs at Columbia and about opportunities to attend conferences, travel in the United States, and participate in community and cultural activities may be obtained from this office. Maps of New York City and discount tickets to concerts and plays are available.

The staff of the International Student Office, 208 Lewisohn, provides information and counseling on University admission, advanced standing, English proficiency examinations, and academic placement.

Degree Requirements

The requirements for the various degrees are outlined in the program descriptions. In addition, the student must meet the requirements given below.

Matriculation and Facilities

Completion of degree requirements and graduation should occur no later than two years after the normal time required for completing the degree.

Students who are no longer required to register for courses but who have not graduated, must maintain their status as graduate students by registering for Matriculation and Facilities, which allows them to make use of various University benefits, including health insurance.

Students are exempted from the continuous registration requirement only when granted a leave of absence.

Design Review

A comprehensive review by the faculty and staff of the design work of every M.Arch. candidate is made at an appointed time. The student must earn a satisfactory recommendation from the design review committee before being allowed to register for the next design course. The committee may recommend that the student be asked to withdraw or that the student be required to complete additional design work and submit to another review before being permitted to proceed to the next term of the design program.

Academic Standing

Students receiving a grade of F in any design course, or in nondesign courses more than one F (or the equivalent), may be asked to withdraw. Although consideration is given to particular cases where a student's work has suffered because of illness, the student may be required to take additional work to demonstrate that he or she has overcome the problems that have resulted in a poor record. A student with more than two non-passing grades is not considered to be in good academic standing.

Advanced Standing

No advanced standing may be granted until a student has successfully completed one year in the Master of Architecture degree program or one year in the program leading to the award of the M.S. degree in urban planning or in historic preservation.

Leave of Absence

A leave of absence may be granted upon the student's written request after satisfactory completion of one year in the Graduate School of Architecture, Planning, and Preservation. A leave of absence assures readmission to the School provided the student complies with the terms of the leave. Leaves of absence are granted only to students in good academic standing.

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 three months* before the student expects to resume his or her studies.

Registration and Expenses

Registration

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

1. The student reports to the Student Affairs Office, 400 Avery, where he or she obtains registration forms and instructions.
2. The student's program must be approved by his or her academic adviser. The student then proceeds to the Student Affairs Office in order to have the course forms signed.
3. The signed forms are then presented at registration. The location of the appropriate offices is given in the registration instructions.

All students are asked to give Social Security numbers when registering in the University. However, Social Security numbers are required of international students *only* when those students will be receiving payment from the University. International students should consult the International Student Office, 208 Lewisohn, for further information. Other students who do not have Social Security numbers should obtain them from their local Social Security offices *well in advance of registration*.

Students who are not citizens of the United States and who need authorization for a special billing of tuition and/or fees to foreign institutions, agencies, or sponsors should go to the International Student Adviser with two copies of the sponsorship letter. Special billing authorization is required of students whose bills are to be sent to a third party for payment.

Auditing Courses

Degree candidates who are registered full time may audit one or two courses in any division of the University without charge. Application is made at the Office of Student Information Services, 208 Philosophy, during the change-of-program period in each term. Applications may not be filed before or after the change-of-program period.

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 courses, consult the Graduate School of Arts and Sciences Division in the Office of Student Information Services. For obvious reasons, elementary language courses, laboratory courses, studio courses, applied music courses, and seminars are not 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. Courses previously taken for credit may not be audited.

Changes in Programs of Study

Students who wish to drop courses or to make other changes in their programs of study must obtain written approval from the Student Affairs Office on a special form. The deadline for making program changes in each term is shown in the Academic Calendar. In no case is permission to add courses granted after the last day of change-of-program period in each term. *Failure to attend classes or unofficial notification to the instructor does not constitute dropping a course and results in a failing grade in the course.*

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

Grades

All students registered in the Graduate School of Architecture, Planning, and Preservation are graded on the pass-fail system described below:

P = Pass (This grade indicates an acceptable level of work.)

F = Fail (The grade of F is a final grade and is not subject to reexamination.)

The mark of R (registration credit; no qualitative grade earned): accepted for degree credit only 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 Student Information Services no 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 that has been taken for R credit may not be repeated later for examination credit.

The mark of AB (absent from the final examination): granted by the instructor no 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 make arrangements with his or her department to take a special examination. If the AB is not removed within one year, it is automatically changed to an F.

The mark of IN (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 that the student has been compelled to postpone for reasons beyond his or her control and satisfactory to the instructor. If the IN is not removed by the completion of the required work within one year, it is automatically changed to an F. *The mark of IN cannot be assigned without approval from the Dean's Office.*

The mark of YC (year course): given at the end of the first term of a course in which the full year of 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.

Estimated Expenses

The approximate cost of attending the University for the eight months of the academic year is as follows. Tuition is for the 1988-1989 academic year. An increase is expected for the 1989-1990 academic year.

Tuition for a 30-point program	\$12,600
Living expenses (room, board, books, clothing, laundry, travel, sundries)	<u>9,000</u>
	\$21,600

Materials

Books and supplies for Architecture students are available at the Charette Store in Avery Hall. 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.

Fees

The following fees, prescribed by statute, will be in effect for 1988-1989, and are subject to change at the discretion of the Trustees. Students can expect an increase for the 1989-1990 academic year.

University charges such as tuition and fees and residence halls and board plans are due and payable in full by the date announced before the beginning of each term. The full amount of any charge may be paid when due without penalty, or payment may be made in installments. If partial payments are made, a **FINANCE CHARGE** is assessed on amounts not paid by the due date on the initial bill received prior to registration and thereafter as indicated on subsequent monthly bills. In either event, however, the student is required to sign a Retail Installment Credit Agreement at the time of registration which sets forth the terms and conditions of payment. All charges must be paid by the end of the term.

It is the policy of the University to withhold diplomas, certificates, and transcripts until all financial obligations have been met. Candidates for graduation are urged to pay their bills in full at least one month prior to graduation.

In the event a diploma, certificate, or transcript is withheld because of an unpaid bill, a student will be **required** to use a certified check, money order, or cash to release any of the aforementioned documents.

Tuition

For all courses, per point, except where a special fee is fixed	\$420.00
With the provision that for degree candidates the tuition for a program of 15 to 19 points shall be, per term	12,600.00

Health Insurance Fee and Health Insurance Premium

Payment of the health service fee, which is merely contributory to the total cost of health service, and of the health insurance premium is compulsory for some students and optional for others. Students for whom payment is compulsory may waive participation in the health insurance plan by showing proof of comparable coverage. For benefits attainable under these plans, for regulations governing waiver of participation, and for other information, see Medical Care and Insurance below.

Health service fee, per term	\$83.00
Student health insurance premium	
For the autumn term (September 1-February 1)	
Student only	84.00
Additional cost for one dependent (optional)*	180.00
Additional cost for two or more dependents (optional)*	273.00
For the spring term and summer period (February 1-September 1)	
Student only	116.00
Additional cost for one dependent (optional)*	248.00
Additional cost for two or more dependents (optional)*	378.00

Application Fees and Late Fees

Application for admission as a degree candidate	\$35.00
Application for admission as a special student	15.00
Late application, or late renewal of application, for a degree	50.00

Late Registration Fees

During late registration	\$50.00
After late registration	100.00

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 the student wishes to withdraw from the University. If the student is under twenty-one years of age, a parent or guardian must first give consent in writing to the proper dean or director.

*Unmarried children must be under the age of nineteen. Dependent coverage is available upon application to FIDUCIARY ADMINISTRATIVE SERVICES COMPANY, 201 East 42nd Street, New York, N. Y. 10017. The premium for this coverage is paid directly to the company by the student.

Any student withdrawing must notify his or her school division in the Office of Student Information Services in writing at once; any adjustment of the tuition that the student has paid is reckoned from the date on which the Office receives this written notification. (For partial withdrawal, see Changes in Programs of Study, above.)

The health service fee, health insurance premium, application fees, late fees, and special fees are not refundable.

In addition, at a minimum, the following amount of tuition will be retained:

Students registered for 12 or more points	\$75.00
Students registered for less than 12 points	40.00

After the last day to change programs in each term (see *Academic Calendar*), the above amount is retained *plus* an additional percentage of the remaining tuition (as indicated in the adjustment schedule below) for each week, or part of a week, that the student remains registered after these dates. The student is considered registered until the date on which the student's written notice of withdrawal is received by the Office of Student Information Services.

Adjustment Schedule

	Minimum Tuition Retained	Percentage of Remaining Tuition Retained
Up to and including dates specified above	\$40 or \$75	0
Following week	40 or 75	10
Second following week	40 or 75	20
Third following week	40 or 75	30
Fourth following week	40 or 75	45
Fifth following week	40 or 75	60
Sixth following week	40 or 75	75
Seventh following week	40 or 75	90
Eighth following week	40 or 75	100 (no adjustment)

Application or Renewal of Application for a Degree

Degrees are awarded three times a year—in October, January, and May. A candidate for any Columbia degree (except the doctoral degree) or for a certificate must file an application with the Office of Student Information Services, in 208 Philosophy, in accordance with the dates shown in the *Academic Calendar*. A late fee of \$50 will be charged after these dates and until the expiration of the *late* filing period for each conferral date. Applications received *after* the late filing period will automatically be applied to the next conferral date.

If the student fails to earn the degree by the conferral date for which he or she has made application, the student may renew the application. A \$50 late fee will be charged for late filing of renewals of application according to the same schedule as for original applications (see above).

Requests for Transcripts

The Family Educational Rights and Privacy Act of 1974 as amended prohibits the release of educational records by institutions without the specific written consent of the student or alumnus. Students or alumni may request copies of their records by writing to the Office of Student Information Services, 201 Philosophy, Columbia University, New York, N.Y. 10027. *Official* copies will be sent direct by the University only to an official address such as another university, a business firm, or government agency. However, students or alumni may request that unofficial copies of their transcripts (stamped "Student Copy") be sent direct to them.

There is a charge of \$5 for each transcript requested except for intrauniversity copies sent between University offices. Transcript requests are processed in the order received and require five to seven working days for processing. Specific deadlines should be mentioned, and checks accompanying requests should be made payable to Columbia University.

Medical Care and Insurance

The University has developed a two-part program of medical care to protect and promote the health of its students. The *University Health Service*, on the second and third floors of John Jay Hall, provides students with complete out-patient care with its own staff of nurses, physicians, and specialists. The Health Service plan includes medical, surgical, and psychiatric consultation in the Health Center as needed; health education and out-reach groups organized around topics of interest to students; an extensive program of women's health care including gynecologic care and birth control and pregnancy options, as well as routine care; coverage for necessary tests and x-rays and medications and injections for allergy or foreign travel. The full range of services is described in the Health Service brochure, issued yearly and available at registration or from the deans of students. Through its public health services, the Health Service also protects the University population from communicable diseases and occupational and environmental hazards; acts as health care provider to the faculty and staff; and supports the campus ambulance service.

The other half of the program is the *Student Health Insurance* (SHI), which supplements the Health Service by providing emergency room and hospital, accident, and sickness coverage throughout the year, both at Columbia and away from the University. This policy may be extended to a student's spouse and children by filing an application with the carrier and paying an additional premium. The extensive benefits available under this policy are also described in the Health Service brochure. Further details of coverage and other insurance information can be obtained at the Health Center or by calling the company's representative, Fiduciary Administrative Services, at (212) 233-0150.

The full Health Service fee is charged to all students registered for 12 or more points. Any student living in a University residence hall will also be charged the full Health Service fee. All full-time and residential students are also enrolled in the Student Health Insurance program unless they can prove comparable cover-

age (see below). Accident insurance is provided by the University to all those who pay the full Health Service fee.

Part-time students registered for less than 12 points may elect the Health Service and may, if they choose, participate in the insurance plan by filing an application in the Office of Student Information Services no later than the date specified in the Health Service brochure or by indicating at registration that they wish to be included.

A full-time or residential student who already has a health insurance policy may be exempted from paying the SHI premium if he or she completes the insurance-waiver questionnaire provided during registration and if the policy described is accepted by the University as being comparable to the Student Insurance program. Students who do not know the provisions of their policy or the extent of their coverage will have the SHI premium billed as a charge until they can provide information sufficient for a waiver to be granted. *In order to receive an insurance waiver at registration, the name, number, and provisions of the policy must be known.*

The costs of the Health Service and the insurance program are listed on the schedule of fees under Fees, above.

Service and coverage offered, and fees for the Health Service and the insurance, change from year to year. Students are advised to consult the latest Health Service brochure (available as noted above) for a full and current description of health benefits.

Housing

On Campus

The University provides limited housing for students registered at the Morningside Campus. The rates below are for the academic year 1987-1988. Students can expect rate increases for the 1988-1989 and 1989-1990 academic years.

University residence halls include traditional dormitory facilities as well as suites and apartments for single and married students; furnishings and utilities are included, except for off-campus telephone service, which can be arranged—if desired—with the New York Telephone Company after arrival. For 250-day contracts beginning in September, single rooms are \$2,580 and double rooms are \$2,455. For 350-day contracts, room costs range from \$4,260 to \$4,890. Married-student apartments range from \$5,070 to \$5,515 for 350-day contracts.

Real Estate Management properties (REM) include apartments owned and managed by the University in the immediate vicinity of the Morningside campus. These accommodations are leased to single and married students with and without children. These are leased for one year, as they become available, and may be renewed at rates that reflect the size and location of each apartment, as well as whether furnishings or utilities are included.

Requests for additional information and application forms should be directed to the Assignments Office, 111 Wallach, Columbia University, New York, N.Y. 10027.

Off Campus

The University also operates the Registry of Off-Campus Accommodations, which endeavors to help students find rooms or apartments in rental properties not owned or operated by the University. Listings are varied, change quickly, and are not inspected or approved by the University. It is, therefore, necessary to visit the office, in 115 Hartley, to read the listings and arrange to evaluate personally any that may be of interest. It is advisable to telephone (212) 280-2773 in advance to determine the best time for a visit to the registry.

International House, a privately owned student residence and program center near the campus, has accommodations for about five hundred graduate students, both foreign and American. A cafeteria, recreational facilities, and a varied cultural and professional program are available to members. Rates for a single room in 1987-1988 ranged from \$2,600 to \$4,400 and included meal discounts. Rates may increase for the 1988-1989 academic year. Interested students should apply direct to International House, 500 Riverside Drive, New York, N.Y. 10027; (212) 316-8400.

Disabled Student Services

The Office of Disabled Student Services, 204 Earl Hall, ensures that students with long-term or temporary disabilities have the opportunity to participate to the fullest extent possible in the activities and programs of the University. Staff members act as advocates, resource and referral agents, ombudsmen, and educators while providing counseling and guidance. Strict confidentiality is maintained at all times. The services offered include: producing the *Access Columbia Handbook*, sponsoring support groups, coordinating volunteer and work-study students for assistance, developing workshops which bring together disabled and nondisabled students, faculty, and staff, and maintaining a resource collection containing various materials of interest to disabled students. This office also works with representatives from each school who act as liaisons on behalf of disabled students. Disabled students should first take any financial problems or questions to their school representative. Ms. Ruth Curtis is the Coordinator of Disabled Student Services.

The Office of Disabled Student Services is part of the Office of Equal Opportunity and Affirmative Action, 305 Low Memorial Library. This office is accessible to mobility-impaired students through the disabled-access entrance on the northeast side of Low Memorial Library on the upper level of campus. Telephone: 280-5511.

Financial Aid

General Policies

The goal of the School's program of financial assistance is to provide financial aid to U.S. citizens and permanent residents who have demonstrated need consistent with University guidelines and the analysis of the Graduate and Professional School Financial Aid Service (GAPSFAS). Financial need is met through a combination of grants and/or loans. Students should apply under the separate state-guaranteed loan programs. An entering student who receives a scholarship grant should be able to meet, through a combination of the grant, loan funds, parental contributions, summer earnings, and other resources, all expenses through the academic year. The need of a student is determined by assessing all possible resources including the student's own resources, those of his or her spouse, if any, and a parental contribution based on a uniform method of computation through GAPSFAS. From these resources, a student's estimated expenses are deducted; the difference becomes the student's "need."

In subsequent years a student who continues to have financial need and continues to achieve a satisfactory record will qualify for a continuation of financial aid. A new application must be made each year.

A scholarship grant is applied as a credit toward tuition: one half at registration for the autumn term, the other half at registration for the spring term.

Application Procedure

The Graduate School of Architecture and Planning is a participant in the Graduate and Professional School Financial Aid Service (GAPSFAS). Accordingly, all applicants, their parents, and spouses or spouses-to-be must complete a GAPSFAS application form. Such forms are obtained from GAPSFAS, Box 2614, Princeton, New Jersey 08540. A financial aid application can be considered only if it has been analyzed by the GAPSFAS. Each parent must complete the appropriate section of the GAPSFAS application. In view of limited financial aid resources, an applicant's assertion of self-support or emancipation is not recognized in awarding scholarship grants. Applications for financial aid should be filed with the GAPSFAS as soon as possible after the admission application has been submitted so that if a favorable admission determination is made, the financial aid application from GAPSFAS can be promptly reviewed.

Guaranteed Student Loan (GSL) Program

Commonly referred to as the "state loan" program, the Guaranteed Student Loan (GSL) is a federally insured, federally subsidized loan obtained through a bank, savings and loan associations, credit union or other participating lender, and is usually administered by a state guarantee agency. Repayment of interest and principal is deferred until six months after the student ceases at least half-time registration. Applications are available from participating lenders. Eligibility for a GSL is limited to U.S. citizens and permanent residents and is based on

an analysis of financial need, for which purpose submission of a financial statement to the Graduate and Professional School Financial Aid Service (GAPSFAS) is required. The GAPSFAS form may be obtained by writing to GAPSFAS, Box 2614, Princeton, New Jersey 08540. Federal regulations require that certain information concerning the student's financial status be verified by the financial aid office. Therefore, each applicant is also required to submit a copy of his or her most recent federal income tax return. Complete current information concerning eligibility requirements, borrowing limits, and conditions of repayment may be obtained from the Office of Student Affairs, 400 Avery Hall.

Supplemental Loans for Students (SLS) (formerly ALAS)

Supplemental Loans for Students (SLS) are available to graduate students who are U.S. citizens or permanent residents, through a participating lender (bank, savings and loan, credit union). The SLS is a federally insured loan available for those who cannot demonstrate financial need according to GSL criteria or who need to borrow funds in addition to a GSL. Repayment of the SLS principal is deferred while the student is enrolled full time but interest payments must begin immediately. When combined with other resources, the SLS may not exceed the cost of attendance minus all other aid.

Perkins Loan Program (formerly NDSL)

The Perkins Loan Program, institutionally administered federal funds, is available to U.S. citizens and permanent residents who demonstrate need that exceeds the GSL. Graduate School policy restricts Perkins Loans to full-time students. Federal regulations mandate that priority for Perkins Loans be assigned to students who show exceptional need, as determined by a federally approved need analysis. For this purpose, the GAPSFAS form and copies of income tax returns (see GSL above) must be submitted. Repayment of interest and principal is deferred while the student is registered at least half-time. Complete current information concerning eligibility requirements, borrowing limits, and conditions of repayment may be obtained from the Office of Student Affairs, 400 Avery Hall.

Student Employment

College Work-Study Program

The College Work-Study Program was established by Congress to aid U.S. citizens and permanent residents who need to work in order to meet school expenses. Eligibility for this program depends on financial need as determined by a federally mandated need analysis for which the GAPSFAS and recent income tax forms (see GSL above) are required. Each year Columbia students fill many on-campus positions, as well as jobs in off-campus public and nonprofit organizations, through funds allocated to this program. Graduate School policy restricts employment in this program to 20 hours a week during the academic

year. Students may work full-time during the summer and vacation periods. Students who will begin graduate work during the regular academic year may hold work-study positions during the summer prior to their first registration. Current information concerning eligibility requirements and application procedures may be obtained from the Office of Student Affairs, 400 Avery Hall.

New York State Tuition Assistance Program

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

Application forms and further information can be obtained from the New York State Higher Education Services Corporation, Tower Building, Empire State Plaza, Albany, New York 12255. Application for awards should be filed three months in advance of the beginning of the term for which the grant is to apply.

Financial Aid Transcripts

Applicants for financial aid must secure a financial aid transcript (not an academic transcript) from any institution previously attended, even if the student never applied for support from that institution. Forms to request this information are available from the Financial Aid Office. *Once these forms are on file, they need not be requested again.*

Statement of Registration Compliance and Educational Purpose

Applicants must complete a statement of compliance with the requirements of the Selective Service Act and a statement of educational purpose promising to use the aid provided for educational expenses. Forms for this purpose are available through the Financial Aid Office.

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 usually December 31.

THE AMERICAN ASSOCIATION OF UNIVERSITY WOMEN gives fellowships to women for their last year of enrollment in professional schools. The deadline date is December 15 before the final year of graduate studies. Applications can be obtained from: AAUW, 2401 Virginia Avenue, NW, Washington, D.C. 20037.

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 institute of higher learning within the State upon graduation. Applications may be obtained from the New York State Higher Education Services Corporation, Tower Building, Empire State Plaza, Albany, New York 12255, 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 Institute of Health, Bethesda, Maryland 20014, and are due by December 1.

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 and women 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 the applicant's instructors; and particularly on the applicant's demonstrated ability and estimated potential for leadership in a 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 the fellow is enrolled. In addition fellows are 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, and to submit such a paper. Fellows of the Graduate School of Architecture, Planning, and Preservation receive elective credit for this course.

In addition to formal classes, the International Fellows have an extensive program of extracurricular activities. 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.

For information about the program and for application forms, write direct to the International Fellows Program, 1419 International Affairs Building, Columbia University, New York, N.Y. 10027. Applications must be submitted by April 15.

University Fellowships and Scholarships

Fellowships and scholarships for graduate study are awarded annually from funds provided by the University and endowments. In order to be considered, applicants merely submit the financial aid request of the Graduate School of

Architecture, Planning, and Preservation application to the Admissions Office at the time they apply to the School. The deadline for financial aid applications for *current students* is April 1. Forms can be obtained from the Admissions Office during the spring term.

Medals and Prizes

Medals and prizes are awarded at Commencement.

ALPHA RHO CHI MEDAL

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

AMERICAN INSTITUTE OF ARCHITECTS MEDAL AND CERTIFICATE

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.

AMERICAN INSTITUTE OF PLANNERS CERTIFICATE

Given to an outstanding graduate student in planning.

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 theses.

NEW YORK SOCIETY OF ARCHITECTS MATTHEW DEL GAUDIO AWARD

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

CHARLES ABRAMS URBAN PLANNING THESIS AWARD

Assistantships and Readerships

Teaching assistantships and readerships are available to qualified students. Assistants divide their time equally between their studies and various tasks, helping faculty members in instruction and in administration. A list of teaching assistantships and readerships is available in the Dean's Office in March. Applications should be addressed to the Assistant to the Dean during the spring term of each year.

Other Sources of Student Employment

Many part-time jobs are available for students who do not qualify for the College Work-Study Program. A comprehensive list of off-campus employment opportunities is maintained by the Office of Student Employment, 206 Lewisohn.

Wives or husbands of students may consult the Office of Student Employment for information. Those who are interested in full-time jobs on the campus should contact the University Personnel Office, 209 Dodge. Most of these jobs

are clerical or secretarial in nature, usually requiring some typing and in some instances stenography as well. Regular full-time University employees are eligible for a limited number of points of tuition exemption providing they meet the stated requirements of the Supporting Staff Plan (a copy of which can be obtained from the University Personnel Office, 313 Dodge), as well as the admission requirements of the school or 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 in architectural offices for summer employment and full-time employment for graduates is maintained in the Dean's Office.

Official Regulations

Reservation of University Rights

This bulletin is intended for the guidance of persons applying for or considering application for admission to Columbia University and for the guidance of Columbia students and faculty. The bulletin sets forth in general the manner in which the University intends to proceed with respect to the matters set forth herein, but the University reserves the right to depart without notice from the terms of this bulletin. The bulletin is not intended to be and should not be regarded as a contract between the University and any student or other person.

University Regulations

According to University regulations, each person whose registration has been completed is considered a student of the University during the term for which he or she is registered unless the student's 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 the student is first registered.

The privileges of the University are not available to any student until he or she has completed registration. A student who is not officially registered for a University course may not attend the course unless granted auditing privileges (see *Auditing Courses*, above). No student may register after the stated period.

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 does not reduce the 60 points of residence credit required for obtaining both degrees.

Students are held accountable for absences incurred owing to late enrollment.

Religious Holidays

It is the policy of the University to respect its members' observance of their major religious holidays. Officers of administration and of instruction responsible for the scheduling of required academic activities or essential services are expected to avoid conflict with such holidays as much as possible. Such activities include examinations, registration, and various deadlines that are a part of the Academic Calendar. (See *Academic Calendar* for dates of religious holidays.)

Where scheduling conflicts prove unavoidable, no student will be penalized for absence due to religious reasons, and alternative means will be sought for satisfying the academic requirements involved. If a suitable arrangement cannot be worked out between the student and the instructor involved, students and instructors should consult the appropriate dean or director. If an additional appeal is needed, it may be taken to the Provost.

Academic Discipline

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

Rules of University Conduct

The Rules of University Conduct (Chapter XLI of the Statutes of the University) provide special disciplinary rules applicable to demonstrations, rallies, picketing, and the circulation of petitions. These rules are designed to protect the rights of free expression through peaceful demonstration while at the same time ensuring the proper functioning of the University and the protection of the rights of those who may be affected by such demonstrations.

The Rules of University Conduct are University-wide, and displace the normal disciplinary procedures of each School or Division ("Dean's discipline"), although a student who is charged with a violation of the Rules has the option of choosing Dean's discipline.

All University faculty, students, and staff are responsible for compliance with the Rules of University Conduct. Copies of the full text are available at the Office of the University Senate, 402 Low Memorial Library, at the Office of Student Information Services, 208 Philosophy, and at the Office of Student Activities, 206 Ferris Booth.

Statement of Nondiscriminatory Policies

The University is required by certain Federal statutes and administrative regulations to publish the following statements:

Consistent with the requirements of Title IX of the Education Amendments of 1972, as amended, and Part 86 of 45 C.F.R., the University does not discriminate on the basis of sex in the conduct or operation of its education programs or activities (including employment therein and admission thereto). Inquiries concerning the application of Title IX and Part 86 of 45 C.F.R. may be referred to Ms. Rosalind S. Fink, the Director of the University's Office of Equal Opportunity and Affirmative Action (305 Low Memorial Library, New York, N.Y. 10027, telephone 212-280-5511), or to the Director, Office for Civil Rights (Region II), 26 Federal Plaza, New York, N.Y. 10007.

Columbia University admits students of any race, color, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the University. It does not discriminate on the basis of race, color, national and ethnic origin in administration of its educational poli-

cies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs.

Consistent with the requirements of Section 504 of the Rehabilitation Act of 1973, as amended, and Part 84 of 45 C.F.R., the University does not discriminate on the basis of handicap in admission or access to, or employment in, its programs and activities. Section 503 of the Rehabilitation Act of 1973 requires affirmative action to employ and advance in employment qualified handicapped workers.

The University in addition desires to call attention to other laws and regulations that protect employees, students, and applicants.

Title VI of the Civil Rights Act of 1964, as amended, prohibits discrimination on the basis of race, color, or national origin in programs or activities receiving Federal financial assistance. Title VII of the Civil Rights Act of 1964, as amended, prohibits employment discrimination because of race, color religion, sex or national origin. Executive Order 11246, as amended, prohibits discrimination in employment because of race, color, religion, sex or national origin and requires affirmative action to ensure equality of opportunity in all aspects of employment. In addition, New York Human Rights Law, Article 15, Executive Law Section 296 prohibits discrimination in employment because of marital status.

The Equal Pay Act of 1963 prohibits discrimination on the basis of sex in rates of pay. The Age Discrimination in Employment Act of 1967, as amended, prohibits discrimination in employment on the basis of age.

The Columbia University Senate on December 1, 1978, passed a resolution announcing its general education policy on discrimination which reaffirms the University's commitment to nondiscriminatory policies in the above-mentioned categories, as well as its policy not to discriminate on the basis of sexual orientation.

Section 402 of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, prohibits job discrimination and requires affirmative action to employ and advance in employment qualified special disabled veterans and veterans of the Vietnam era.

All employees, students, and applicants are protected from coercion, intimidation, interference or discrimination for filing a complaint or assisting in an investigation under any of the foregoing policies and laws.

The University's Office of Equal Opportunity and Affirmative Action has also been designated to coordinate the University's compliance activities under each of the programs referred to above. Any employee who believes that he or she has been denied equal opportunity should contact this Office, which will investigate complaints and counsel employees on questions relating to equal opportunity and affirmative action.

Discrimination Grievance Procedure

The University's Discrimination Grievance Procedure is available to enrolled students who feel that they have been the victims of sexual harassment or discrimination on the basis of race, religion, national or ethnic origin, sex, sexual orienta-

tion, marital status, age, handicap, or Vietnam Era or qualified special disabled veteran status. A copy of the Procedure is available in the Office of Equal Opportunity and Affirmative Action, 305 Low Memorial Library (280-5511).

A Complaint under this Procedure is initiated through completion of a Discrimination Complaint Form, also available in the Equal Opportunity Office. Staff in that Office will assist in completing the Form and also are available for confidential counseling and informal investigation of discrimination claims.

Protection Against Sexual Harassment

Policy Statement on Sexual Harassment

Federal Law [Title VII of the Civil Rights Act of 1964] provides that it shall be an unlawful discriminatory practice for any employer, because of the sex of any person, to discharge without just cause, to refuse to hire, or otherwise to discriminate against that person with respect to any matter directly or indirectly related to employment. Harassment of any employee on the basis of sex violates this federal law.

To help clarify what is unlawful sexual harassment the Federal Equal Employment Opportunity Commission has issued Guidelines on the subject. While the EEOC Guidelines apply only to faculty and other employees, the University prohibits sexual harassment of any member of the Columbia community, whether such harassment is aimed at students, faculty, or other employees, and violators will be subject to disciplinary action. Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature will constitute sexual harassment when:

submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment;

submission to or rejection of such conduct by an individual is used as the basis for academic or employment decisions affecting that individual; or,

such conduct has the purpose or effect of unreasonably interfering with an individual's academic or work performance or creating an intimidating, hostile, or offensive academic or working environment.

Any person who believes that he or she is being sexually harassed should seek a resolution of the problem through discussion with the person directly concerned. If this does not resolve the matter, or if there is a reluctance to deal directly with the person involved, the problem should then be brought to the attention of a member of the University Panel on Sexual Harassment. A list of current panelists is attached. Advice may also be sought from the Office of Equal Opportunity and Affirmative Action (305 Low Library; 280-5511). If these steps have not resolved the problem, the applicable University grievance procedure should be used, including the University Discrimination Grievance Procedure that is available if no other University grievance procedure is specifically applicable. No one at the University may retaliate in any way against a person who makes a claim of sexual harassment.

Charge of the University Panel on Sexual Harassment

The Columbia Panel on Sexual Harassment is composed of trusted, accessible, and sympathetic members of the University community who act as mediators. Their goal is the protection and counseling of any member of the University who is made to feel personally pressured or uncomfortable because of the behavior of another University member who is in a position of power. Members of the Panel

provide a safe, impartial, nonadversarial setting in which the problem can be considered or solved, through confidential counseling and, when requested, mediation between the complainant and the alleged harasser. The Panel thus provides guidance and protection for the accused as well, identifying false or mistaken accusations, misunderstandings, or unconscious behavior. Panel members finally become a link through which the University can take account of, and take appropriate action against those on campus who are behaving illegally. The Panel on Sexual Harassment is thus a timely, protective, and compassionate arm of the University, one which not only sensitizes and educates the University community, but also demonstrates that University's commitment to fair treatment of all its members.

Sexual Harassment Complaint Procedures

A. Going to a Panelist

1. A complainant comes to a Panel member with a complaint, to report an incident, or to seek advice.
2. The Panel member obtains data through discussion with the complainant, but keeps no records.
3. The Panel member selects one of the counseling or mediation options suggested by her training.
4. If the case seems serious enough, the Panel member refers it to the Equal Opportunity/Affirmative Action Office.

B. Initiating a Formal Investigation

1. A formal investigation may be initiated in either of the following ways:
 - a. A complainant files a formal grievance under the applicable University grievance procedure. This step may be taken at any time, either with or without consulting a Panel member.
 - b. A Panel member, believing that further action in a particular case might be appropriate, with the permission of the complainant, consults with the director of the EOAA office and the General Counsel or their designees. Consultations among the Panel member, General Counsel, and EOAA office may also occur in a case of multiple complaints.
2. All investigatory or formal actions taken will be conducted by the University and not the Panel.

**Panel
Membership
List*****Morningside****PROFESSIONAL
SCHOOLS**

Harry Arouh
Graduate School of
Journalism
Lecturer I
607 Journalism
280-3328

Ann Bartel
Graduate School of
Business
Professor
710 Uris
280-4419

Phyllis Dain
School of Library
Service
Professor
611 Butler Library
280-4032

Samuel Miller
School of Special Work
Associate Professor
711 McVickar
280-2735

Elliott Sclar
Graduate School of
Architecture, Planning,
and Preservation
Professor
410 Avery
280-3513

Howard Stein
School of the Arts
Professor
605 Dodge
280-3408

Malvin Teich
School of Engineering
and Applied Science

Professor
Electrical Engineering
1332 Seeley W. Mudd
280-3103, 3117

William Young
School of Law

Professor
8W8 Law
280-2645

ARTS AND SCIENCES

(Columbia College,
Graduate School of Arts
and Sciences, School of
General Studies, and
School of International
and Public Affairs)

Eric Foner
Department of History
Professor
60 Fayerweather, Box 16
280-5253

Inge Halpert
Department of Germanic
Languages
Professor
320 Hamilton
280-3201, 4781

Thomas P. Bernstein
Department of Political
Science
Professor
714 International Affairs
280-3664

**CENTRAL
ADMINISTRATION**

Mary Murphy
Deputy Vice President for
Student Services
213 Low Library
280-2857

**Lamont-Doherty
Geological
Observatory**

Constance Sanctetta
Senior Research Scientist
Core Lab, Room 204
Palisades, N.Y. 10964
914-359-2900, Ext. 412

Nevis Laboratories

Allan Sachs
Professor of Physics
P.O. Box 137
Irvington, N.Y. 10533
914-591-8100, Ext. 213

**University
Libraries**

Charling Fagan
Academic Information
Services Group
Acting Director
317 Butler Library
280-2245

Angela Giral
Librarian
Avery Library
280-3068

*While Panelists are identified by location, school, or administrative area on this list, each of them is in fact available to any member of the Columbia community. Persons who feel uncomfortable speaking with "their" Panelists(s) are encouraged to seek out a Panelist from elsewhere at the University.

Health Sciences

Jeannette Coy
Harlem Hospital Center
Departmental Administrator
Obstetrics and Gynecology
8111 King Pavilion
491-3621

Marlene Klyvert
School of Dental and
Oral Surgery
Associate Professor
Division of Dental
Hygiene
Box 20 Physicians and
Surgeons
630 West 168th Street
305-8478

Eura Lennon
School of Nursing
Assistant Professor
617 West 168th Street
305-3198

Marion Murphy
Health Sciences
Administration
Departmental Administrator
Pediatrics
Babies Hospital South
1-104
630 West 168th Street
305-7175

Audrey Penn
College of Physicians and
Surgeons
Professor
Neurology Department
4-420
630 West 168th Street
305-3533

Virginia Rauh
School of Public Health
Assistant Professor
Center for Population and
Family Health
60 Haven Avenue, B-3
305-6960

Ethel Siris
College of Physicians and
Surgeons
Associate Professor of
Clinical Medicine
Department of Medicine
PH-124
622 West 168th Street
305-2529

Academic Calendar: 1988-1989; 1989-1990*

Major Religious Holidays

For a statement of University policy regarding holidays, *see* Attendance and Length of Residence under *Official Regulations*.

The Jewish holy days shown below begin at sundown of the preceding day. Some of the major holidays are the following:

1988-1989

Monday, Tuesday, September 12, 13	Rosh Hashanah
Wednesday, September 21	Yom Kippur
Monday, Tuesday, September 26, 27	First days of Succoth
Monday, Tuesday, October 3, 4	Concluding days of Succoth
Friday, March 24	Good Friday
Thursday, Friday, April 20, 21	First days of Passover
Wednesday, Thursday, April 26, 27	Concluding days of Passover
Friday, Saturday, June 9, 10	Shavuoth
Not yet announced	Id al Adha
Not yet announced	Id al Fitr

1989-1990

Saturday, September 30,	Rosh Hashanah
Sunday, October 1	Yom Kippur
Monday, October 9	First days of Succoth
Saturday, Sunday, October 14, 15	Concluding days of Succoth
Saturday, Sunday, October 21, 22	First days of Passover
Tuesday, Wednesday, April 10, 11	Good Friday
Friday, April 13	Concluding days of Passover
Monday, Tuesday, April 16, 17	Shavuoth
Wednesday, Thursday, May 30, 31	Id al Adha
Not yet announced	Id al Fitr
Not yet announced	

Summer Period, 1988

A late fee must be paid by students who apply or reapply after Monday, August 1, for all degrees (except doctoral degrees) to be conferred in October.

JULY

30 Saturday. Last day to apply for admission to the autumn term as a special student.

*The Academic Calendar is subject to review and possible modification by the School.

AUGUST

1 Monday. Last day to apply or reapply for October degrees (see September 8).

Autumn Term 1988

A **late fee** must be paid by students allowed to register **after Thursday, September 8**.

A **late fee** must be paid by students who apply or reapply **after Friday, October 28**, for all degrees (except doctoral degrees) to be conferred in January.

SEPTEMBER

6-8 Tuesday-Thursday. Registration, including payment of fees.

8 Thursday. Classes begin.

8 Thursday. Last day to file *late* application or renewal of application for October degrees. Applications received after this date will automatically be applied to the next conferral date.

9 Friday. Late registration begins.

12 Monday. First day to change programs and apply to audit courses.

16 Friday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) register for R credit. **No adjustment of fees for individual courses dropped after this date.**

OCTOBER

25 Tuesday. Midterm date.

26 Wednesday. Conferring of October degrees.

28 Friday. Last day to apply or reapply for all degrees, except doctoral degrees, to be conferred in January (see December 2).

NOVEMBER

7 Monday. Academic holiday.

8 Tuesday. Election Day. University holiday.

24-27 Thursday-Sunday. Thanksgiving holidays.

DECEMBER

2 Friday. Last day to file *late* application or renewal of application for January degrees. Applications received after this date will automatically be applied to the next conferral date.

14 Wednesday. Classes end.

15 Thursday. Study day.

15 Thursday. Last day to apply for admission to the spring term as a special student.

16-23 Friday-Friday. Midyear course examinations. Term ends.

24 Saturday, through January 17, 1989, Tuesday. Winter holidays.

Spring Term 1989

A late fee must be paid by students allowed to register after Friday, January 20.

A late fee must be paid by students who apply or reapply after Monday, February 20, for all degrees (except doctoral degrees) to be conferred in May.

JANUARY

15 Sunday. Last day to apply for 1989-1990 admission to the Master of Architecture program.

16 Monday. Martin Luther King, Jr., Day observed.

18-20 Wednesday-Friday. Registration, including payment of fees.

23 Monday. Classes begin. Late registration begins.

25 Wednesday. Conferring of January degrees.

26 Thursday. First day to change programs and apply to audit courses.

FEBRUARY

1 Wednesday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) register for R credit. **No adjustment of fees for individual courses dropped after this date.**

15 Wednesday. Last day to apply for 1989-1990 admission to the Graduate School of Architecture, Planning, and Preservation (except for the Master of Architecture program—see January 15).

17 Friday. Last day for Ph.D. candidates who are to stand for the final examination (defense) this term to submit applications to the dean's office.

20 Monday. Last day to apply or reapply for all degrees, except doctoral degrees, to be conferred in May (see March 31).

MARCH

5 Sunday. Annual Commemoration Service in St. Paul's Chapel.

9 Thursday. Midterm date.

12-19 Sunday-Sunday. Spring holidays.

31 Friday. Last day to file late applications or renewal of application for May degrees. Applications received after this date will automatically be applied to the next conferral date.

MAY

3 Wednesday. Classes end.
4 Thursday. Study day.
5-12 Friday-Friday. Final course examinations. Term ends.

Commencement 1989

MAY

14 Sunday. Baccalaureate Service.
17 Wednesday. Conferring of degrees and certificates.

Summer Period 1989

A **late fee** must be paid by students who apply or reapply **after Monday, July 31**, for all degrees (except doctoral degrees) to be conferred in October.

JULY

31 Monday. Last day to apply for admission to the autumn term as a special student.
31 Monday. Last day to apply or reapply for all degrees, except doctoral degrees, to be conferred in October (see September 7).

Autumn Term 1989

A **late fee** must be paid by students allowed to register **after Thursday, September 7**.

A **late fee** must be paid by students who apply or reapply **after Friday, October 27**, for all degrees (except doctoral degrees) to be conferred in January.

SEPTEMBER

4 Monday. **Labor Day. University holiday.**
5-7 Tuesday-Thursday. Registration, including payment of fees.
7 Thursday. Classes begin.
7 Thursday. Last day to file *late* application or renewal of application for October degrees. Applications received after this date will automatically be applied to the next conferral date.
8 Friday. Late registration begins.
11 Monday. First day to change programs and apply to audit courses.

15 Friday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) register for R credit. **No adjustment of fees for individual courses dropped after this date.**

OCTOBER

24 Tuesday. Midterm date.

25 Wednesday. Conferring of October degrees.

27 Friday. Last day to apply or reapply for all degrees, except doctoral degrees, to be conferred in January (see December 1).

NOVEMBER

6 Monday. Academic holiday.

7 Tuesday. Election Day. University holiday.

23-26 Thursday-Sunday. Thanksgiving holidays.

DECEMBER

1 Friday. Last day to file *late* application or renewal of application for January degrees. Application received after this date will automatically be applied to the next conferral date.

13 Wednesday. Classes end.

14 Thursday. Study day.

15 Friday. Last day to apply for admission to the spring term as a special student.

15-22 Friday-Friday. Midyear course examinations. Term ends.

23 Saturday, through January 16, 1990, Tuesday. Winter holidays.

Spring Term 1990

A **late fee** must be paid by students allowed to register **after Friday, January 19.**

A **late fee** must be paid by students who apply or reapply **after Monday, February 19,** for all degrees (except doctoral degrees) to be conferred in May.

JANUARY

15 Monday. Last day to apply for 1990-1991 admission to the Master of Architecture program.

15 Monday. Martin Luther King, Jr., Day observed.

17-19 Wednesday-Friday. Registration, including payment of fees.

22 Monday. Classes begin. Late registration begins.

24 Wednesday. Award of January degrees.

25 Thursday. First day to change programs and apply to audit courses.

31 Wednesday. Last day to (1) register for credit, (2) change programs, (3) apply to audit courses, and (4) register for R credit. **No adjustment of fees for individual courses dropped after this date.**

FEBRUARY

15 Thursday. Last day to apply for 1990-1991 admission to the Graduate School of Architecture, Planning, and Preservation (except for the Master of Architecture program—see January 15).

19 Monday. Last day to apply or reapply for all degrees, except doctoral degrees, to be conferred in May (see March 30).

MARCH

4 Sunday. Annual Commemoration Service in St. Paul's Chapel.

8 Thursday. Midterm date.

11-18 Sunday-Sunday. Spring holidays.

30 Friday. Last day to file *late* applications or renewal of application for May degrees. Applications received after this date will automatically be applied to the next conferral date.

MAY

2 Wednesday. Classes end.

3 Thursday. Study day.

4-11 Friday-Friday. Final course examinations. Term ends.

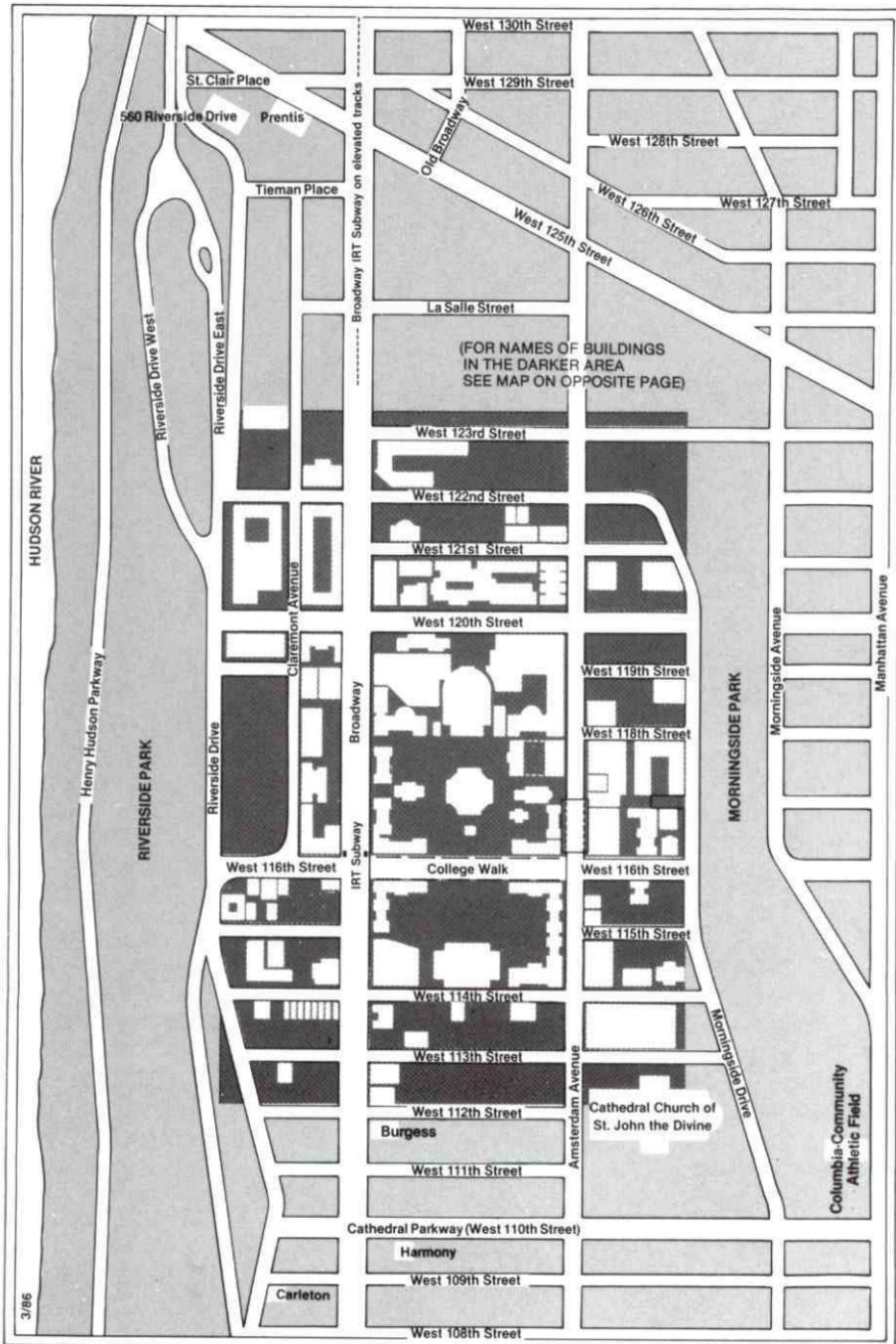
Commencement 1990

MAY

13 Sunday. Baccalaureate Service.

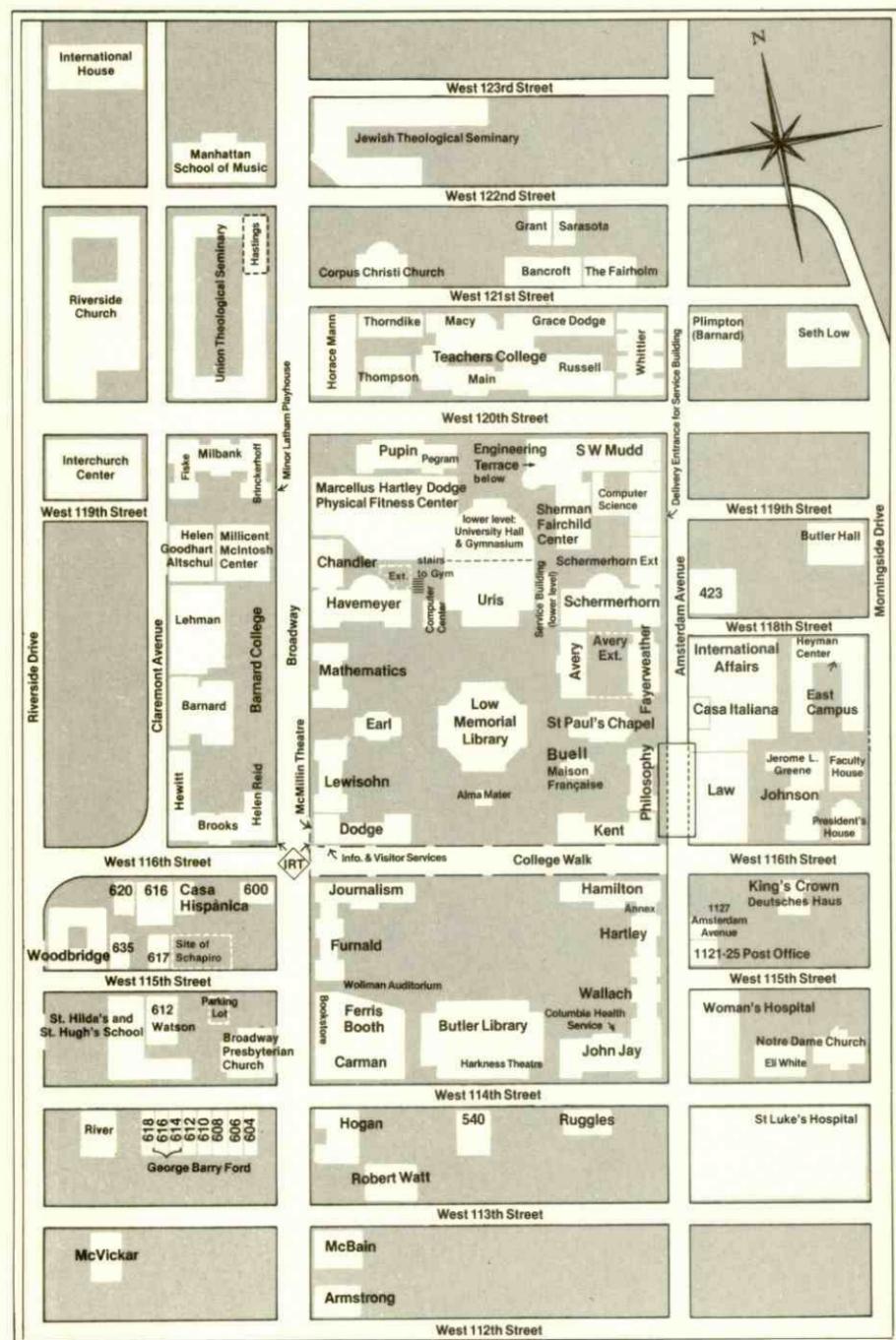
16 Wednesday. Conferring of degrees and certificates.

The Morningside Heights Area of New York City



COLUMBIA UNIVERSITY

The Morningside Campus & Environs



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D. H. S. S.